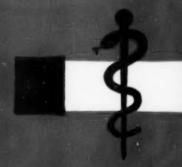
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TIMES

Primum Non Nocere Diagnosis of Lung Cancer Pediatric Medical and Surgical Considerations Treatment of Mental Illness Treatment of Arthritis Immunization Against Poliomyelitis Pediatric Infections The "Binge" Drinker's Liver Coronary Atherosclerosis Is the GP Venishing? Regional Entoritis (Refresher) 1 Medical Confidences and the Lew Forceps Deliveries Clinico-Pathological Conference Mt. Sinai Hospital, N.Y.C. Tetanus (Office Surgery) Editorials Hospital Centers The Physician's Role in Military Science Investments

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help for the alcoholic

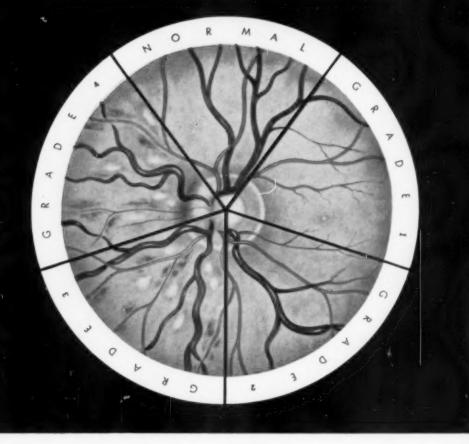
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Off the Record . . .

True Stories From Our Readers

Each incident described has been contributed by one of our readers. Contributions describing actual and unusual happenings in your practice are welcome. For obvious reasons only your initials will be published. An imported German apothecary jar will be sent in appreciation for each accepted contribution.

Something to chew on

Many years ago when cisterns used for the collection of rain-water, could be found with every home in the South, there was an epidemic of dengue fever in our town. There was hardly a home that did not include one or more persons suffering from the illness.

Only those of us who were general practitioners twenty-five to fifty years ago, know of the demand that was made on our time and energy during those epidemics. For days I was unable to sit down to a meal. I would grab a sandwich from the soda fountain in the drug store as I rushed to my car. As I went from house to house and from patient to patient I was masticating the food. Just as "God tempers the wind to the shorn lamb," I was spared from the sickness and continued to go night and day to near exhaustion.

After the epidemic had spent its force, a patient was in my office and in the course of conversation he said, "Doctor, unless it is a medical secret, would you mind telling me what you chewed to keep from getting dengue?" He was almost incredulous when I explained to him that I was so rushed that I was unable to eat my meals and had to resort to eating on my "rounds" to satisfy my hunger. Confidentially, I told him that I did not have dengue fever because I had screened my cistern as the Board of Health had recommended all householders to do.

J. M. B., M.D. Shreveport, La.

From wet pants to wet diapers

Recently I had an obstetrical patient who was near her term. She had been unfortunate in three previous pregnancy periods with spontaneous abortion of from two to five months gestation. She is also a RH negative and this seemed to play a part in the abortions. As a result, she was highly pleased to have reached term but she was also very apprehensive as to what might happen. I had attempted to assure her that everything was all right with her but she still appeared a little dubious.

At the time of her labor, she called

-Concluded on page 21a

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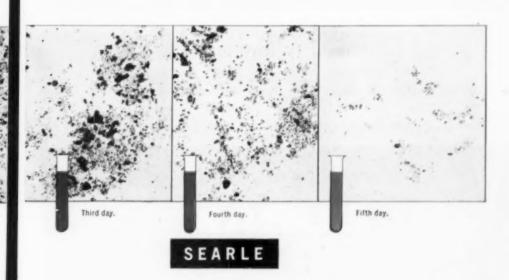
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 McGowan, J. M.: Clinical Significance of Changes in Common Duct Bile Resulting from a New Synthetic Choleretic, Surg., Gynec. & Obst. 103:163 (Aug.) 1956.



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about 1:30 A.M., very excited. She said "I just went to the bathroom and my water broke. My pants are all wet. What shall I do?" She was assured that she could go into the hospital, which she did, and subsequently delivered a perfectly healthy male infant.

D. E. W., M.D. Lincoln, Michigan

A Tantalizing Consolation Contraption

One of my patients can certainly claim the title, of "Mrs. Malaprop." Recently, she asked me if I thought those new "tantalizers" would help her. She is the same one who told me of her friend who never paid the psychiatrist for his "consolation" on which he had been called but felt much better when she was finally put in "contraptions" by an orthopedic surgeon. Everytime I go to see her I come away with another gem similar to these!

S. R. W., M.D. Easton, Pa.

Tall in the straddle

A young couple in rural Alabama rushed very excitedly into the rear entrance of my office carrying a two year old boy and requested to see the doctor immediately. Upon being asked what the trouble was the mother replied "He's growed up in the straddle!" Trying to appear understanding, I asked, "Well just how does this affect him?" She replied as she undressed the patient to show me the affected part, "He gets sore!"

It materialized that the child needed to be circumcized.

> M. J. W., M.D. Berea, Ohio

Is That Bad?

We asked our youngest if he would follow in his dad's footsteps. When he answered in the negative and we asked him why not, he replied: "Because you have to see people in their pajamas!"

> F. X. S., M.D. Milwaukee, Wisconsin

Do Not Disturb

The patient called at 3 a.m. stating that her dentist had extracted a molar tooth the day before and she had awaks ened with severe pain and moderate bleeding. When I casually suggested that her dentist would surely want to be informed, she replied, "Oh, I didn't know I could call my dentist this time of the night. I didn't want to disturb his sleep."

J. D. W., M.D. Evansville, Ind.

Those Happy Pills, Again

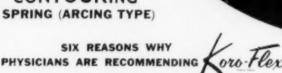
A woman in our city called my office and requested some nerve medicine from my receptionist. I hesitated to give the woman the requested medicine as I dida't know the reason why she wanted it. Therefore, I phoned the woman. She told me she was having "family troubles" and all she wanted was a "transilizer".

> W.O.B., M.D. Greensboro, N.C.

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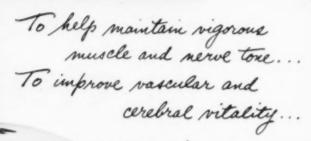
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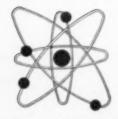
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Edited by Maxwell H. Poppel, M.D., F.A.C.R., Professor of Radiology, New York University College of Medicine and Director of Radiology, Bellevue Hospital Center

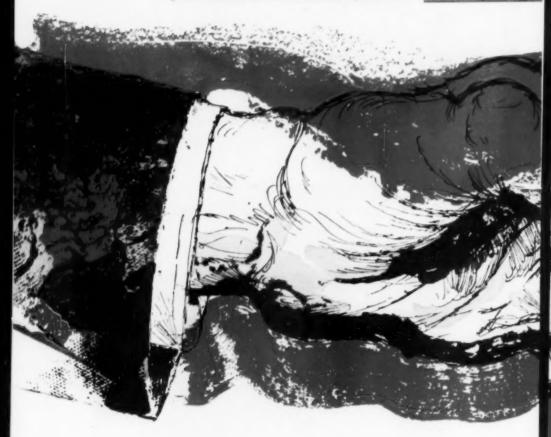
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- 1. Normal
- 3. Carcinoma of the stomach
- 2. Gastritis
- 4. Extrinsic disease

Answer on page 166a



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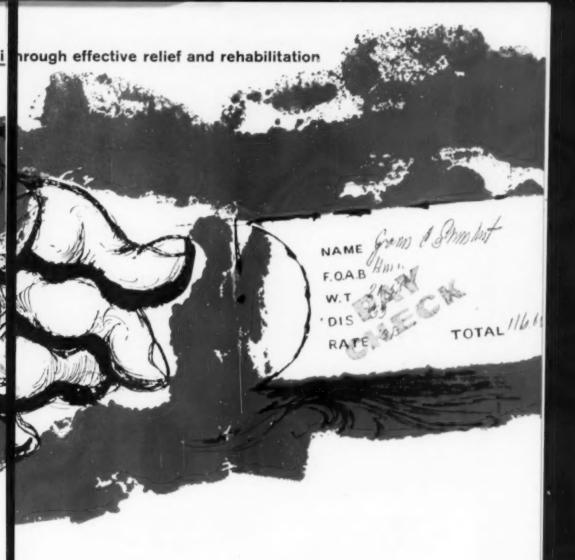
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Ascorbic acid 50.0 mg.

Comprehensive synergistic combination of steroid and nonsteroid antirheumatics...full hormone effects on low hormone dosage...satisfactory remission of rheumatic symptoms in 85% of patients tested.

Steroid or non-steroid therapy: SAFE DEPENDABLE ECONOMICAL

A. H. ROBINS CO., INC., RICHMOND 20, VIRGINIA Ethical Pharmaceuticals of Merit since 1878

Hydrogen Peroxide in its Physiologically Correct and Effective Form



G.H.P. Carbamide is hydrogen peroxide in its stable, physiologically correct and effective form. It represents a scientifically sound advance over the familiar aqueous solution of hydrogen peroxide, overcoming the limitations of the latter product. It is a long-acting, safe, non-aqueous and hygroscopic solution. In the presence of tissue catalase or peroxidase, it releases active oxygen over a prolonged period and holds it in contact with infected tissues-differing notably in this respect from aqueous hydrogen peroxide where the action is transient. G.H.P. Carbamide is a hypo-allergenic, widespectrum bactericide and fungicide; it also has excellent cleansing and deodorizing properties. G.H.P. Carbamide is an economical and effective medicament in the treatment of purulent infections. Used full strength, you may expect rapid recovery from such conditions as chronic Otitis Media and moist Otitis Externa. G.H.P. Carbamide will soften and ease the removal of impacted wax-like cerumen. Apply undiluted topically or as a wet dressing to ulcerated and moist bacterial skin infections, wounds and abrasions. When diluted with two parts of water, it may be used in the treatment of oral infections or as a lavage or instilled into body cavities.

FORMULA: G. H. P. Carbamide contains:

SUPPLIED:

Bottles-1 oz. with dropper Bottles-8 oz.



Samples and literature upon request. Wit

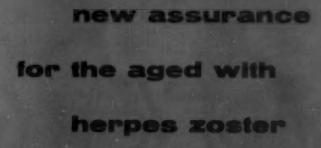
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PHARMACEUTICAL CORP.

1700 Walnut Street

Philadelphia 3, Pa.





... to promote prompt recovery

and greater freedom from

postherpetic neuralgia.

PROTAMIDE®

Sherman Laboratories
Detroit 11, Michigan

Better Calcium Assimilation

TWICE THE PERCENTAL INCREASE OF TOTAL CALCIUM*





MINERALS

OYSTER SHELL

- . Contains Trace Minerals
- . Contains More Calcium
- Is Phosphorus Free (Naturally)

LOW DOSAGE (1 tah t.i.d.) LOW COST (3 cents per tablet)

MARION

MARION LABORATORIES

2910 GRAND AVENUE KANSAS CITY, MISSOURI

- Write for samples and literature
- Available at any NWDA Wholesaler

"Hardy, J. A.: Obstet. & Gynec. (Nov. 1956)



THE UNWANTED CHILD

One day, during my twenty-four years as coroner, I was called to attend a woman who was in labor. She was alone in her brother's home, as he and his family were away vacationing.

Upon examination I found that the head of the baby had emerged from the vagina, and the baby appeared lifeless. Further inspection revealed some marks on the infant's neck. There were no labor pains or uterine contractions. The delivery was completed by extracting the baby and expressing the placenta.

The infant was then taken to a mortuary and an autopsy confirmed the supposition that death was due to strangulation.

The woman was subsequently questioned and she confessed that the baby was illegitimate and because of this fact she had choked the baby to death as soon as the head was born. This act caused the contractions to cease thereby bringing an otherwise normal labor to a standstill.

The woman was brought to trial and served a fifteen year sentence for infanticide.

B.J.C., M.D. Austin, Minn.



in seasonal allergies ...as in colds

you can check excessive irritant secretions.



and "unlock" the closed-up nose

orally with

Novahistine[®]

In the management of seasonal allergies and the common cold, Novahistine works better than antihistamines alone. The distinct additive action of a vasoconstrictor with an antihistaminic drug combats allergic reactions more efficiently . . . provides marked nasal decongestion and inhibits excessive irritant secretions. Novahistine eliminates patient misuse of nose drops, sprays and inhalants . . . avoids the risk of rebound congestion. Novahistine will not cause jitters or insomnia.

Each Novahistine Tablet or teaspoonful of Elixir provides 5.0 mg. of phenylephrine HCl and 12.5 mg. of prophenpyridamine maleate. For patients who need greater vasoconstriction, Novahistine Fortis Capsules and Novahistine with APC Capsules contain twice the amount of phenylephrine.

Pitman-Moore Company · Division of Allied Laboratories, Inc.
Indianapolis 6, Indiana

'PREMARIN'' WITH MEPROBAMATE

for orientation therapy
when unusual emotional stress
complicates
the menopausal picture

for the control of the menopausal syndrome



 when the patient is by temperament "high-strung" and tense



 when psychogenic manifestations are acute, prominent or prolonged



 in the initial stage of therapy to alleviate mental distress and permit more rapid emotional adjustment give your menopausal patient the advantage of extra relief from anxiety and tension with all the physical and mental benefits of "Premarin" therapy

new

"PREMARIN" WITH MEP

MEPROBAMATE

Conjugated Estrogens (equine) with Meprobamate

"Premarin" is specific for the alleviation of symptoms due to declining ovarian function. It improves general metabolism, stabilizes the vasomotor system, and imparts a "sense of well being," "Premarin" therapy is directed at the underlying cause of the symptoms: estrogen deficiency.

Meprobamate acts selectively on the central nervous system to block the transmission of excessive stimuli. It promotes muscular relaxation, relieves anxiety and apprehension, restores tranquility and promotes normal sleeping habits. It is a practical, well tolerated, clinically useful tranquilizer.*

<u>Suggested dosage regimen:</u> One tablet three times daily in 21 day courses with a rest period of one week. Dosage should be adjusted depending on individual requirements. When emotional symptoms are relieved, therapy may be continued with "Premarin" alone.

Supplied: Each tablet contains conjugated estrogens equine ("Premarin"), 0.4 mg, and meprobamate, 400 mg. Available in bottles of 60 and 500 tablets.

*Selling, L. S.: J. Clin. & Exper. Psychopath. 17:7 (Jan.-Mar.) 1956.



Supplied: 5 mg, and 2.5 mg, scored tablets; bottles

of 30 and 100

THREE TO FIVE TIMES MORE EFFECTIVE THAN HYDROCORTISONE





For anxiety, tension and muscle spasm in everyday practice.

- well suited for prolonged therapy
- well tolerated, relatively nontoxic
- m no blood dyscrasias, liver toxicity, Parkinson-like syndrome or nasal stuffiness

RELAXES BOTH MIND AND MUSCLE

WITHOUT IMPAIRING MENTAL OR PHYSICAL EFFICIENCY



tranquiliser with muscle-relaxant action

2-methyl-2-fi-propyl-1,3-propenedial dicarbamete - U. S. Patent 2,724,720

Supplied: 400 mg, scored tablets 200 mg. sugar-coated tablets

Usual dosage: One or two 400 mg. tablets t.i.d.

Literature and samples available on request



WALLACE LABORATORIES New Brunswick, N. J.

CM-8110



What's Your Verdict?

Edited by Ann Picinich, Member of the Ber of New Jersey

A former patient of the city hospital requested a copy of her hospital records for use in a negligence action against a third party. The hospital refused to turn over any such records until the patient executed a form assigning the proceeds of the action to the hospital and to certain unnamed physicians on the staff in payment of charges incurred while she was in the hospital. form did not state the amount of such charges, but merely provided that such amount shall "not exceed twice the rates set forth in the medical fee schedule established by the Workmen's Compensation Board."

The patient objected to the assignment and petitioned the court for an order directing the City Department of Hospitals to release to her a copy of her hospital records. She is willing to sign an assignment in behalf of the hospital for its charges, but objects to the inclusion of an assignment to the physicians.

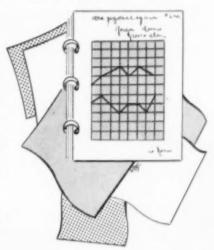
The argument of petitioner's counsel is that the hospital has a lien for its charges under the existing law. Physicians, however, have no such lien. They stand in the same position as other claimants, and must sue to enforce their claims, if any. The assignment is thus a coercive, illegal means of obtaining a lien which the physicians do not other-

wise have under the law.

The hospital seeks justification of its position under a section of the City Charter. That section provides that members of the medical staff who serve on the in-service of a hospital as part-time clinicians shall serve without compensation except that they may accept medical fees for services rendered by them to patients who recover damages in tort actions.

Should the City Department of Hospitals be ordered to supply the petitioner with her hospital records? How would you decide?

Verdict on page 170a.



Vitamins and Minerals

S-M-A contains all the vitamins and minerals known to be required by normal infantsin amounts more than adequate to meet the recognized needs of health and growth. S-M-A is protected by processing techniques that preserve all these essential factors.



Concentrated Liquid

Instant Powder



for sound infant nutrition

Carbohydrate

As with breast milk, S-M-A provides true physiological carbohydrate as the natural carbohydrate for infants. S-M-A has no vegetable sugar. Its only carbohydrate is lactose—the sugar of milk. In amount also, S-M-A carbohydrate (7%) is closely adjusted to the average quantity in human milk.



S-M-A

Concentrated Liquid
Instant Powder



for sound infant nutrition

Fatty Acids

Modern studies increasingly relate normal infant metabolism to the dietary content of essential unsaturated fatty acids. Like human milk, S-M-A fat is high in essential unsaturated fatty acids, and supplies in full the calories required of fat in the diet. Its fatty acid pattern closely parallels that of mother's milk.





Concentrated Liquid Instant Powder



for sound infant nutrition

Proteins

S-M-A contains 1.5 per cent protein, and adequately satisfies the baby's standard daily requirement for 2 Gm. of protein per kilogram of body weight. The important elements in milk protein are the amino acids. S-M-A agrees closely with human milk in its content of these essential substances.

S-M-A protein is complete and adequate.



S-M-A®

Instant Powder



September 25. Second and third degree burns caused by flaming gasoline. Gauze pressure dressings of White's Vitamin A & D Ointment were changed at weekly intervals.



October 25. Healing is complete with minimal scat tissue and no contractures.



SEVERE BURN OR MINOR IRRITATIONS

WHITE'S VITAMIN A & D OINTMENT

Topical application of White's Vitamin A & D Ointment speeds restoration of epithelial and connective tissues. Even severe burns respond favorably to the healing action of Vitamin A & D Ointment.

Diaper rash, also chafing and abrasions, readily yield to its therapeutic and protective qualities. Prepared in suitable fanolin-petrolatum base, White's Vitamin A & D Ointment is pleasant to use, free from excessive oiliness, and will keep indefinitely. Does not stain the skin and is easily laundered from diapers or clothing.

You can prescribe it in 11/2 oz. or 4 oz. tubes; 1 lb. or 5 lb. jars.

- · diaper rash
- soft tissue injuries
- o dry skin
- bedsores
- a slow healing wounds
- varicose and diabetic ulcers
- fissured nipples



WHITE LABORATORIES, INC., KENILWORTH, N. J.



August 25. A typical case of diaper rash, characterized by excoriation and soreness.



September 1. After only one week of local applications with White's Vitamin A & D Ointment each time diaper was changed, the skin surface is normal.

Medical Teasers

A Challenging Crossword Puzzle for the Physician

(Solution on page 124a)

HORIZONTAL

- Palm of the hand or sole of the foot
 Was in debt
- 9. Relating to a structure resembling a veil
- 14. Harem rooms 15. Wax
- 16. Dropsy
- 17. Mite transmitting spotted-fever
- 18. Generalized Cancer
- 20. Not in the office
- 21. Source of heat
- 22. A tuberculin apparently corresponding to Denys's bouillon filtre
- 23. An Anglo-Saxon letter
- 24. Tobacco user
- 26. Hang, without sentence by court
- 28. Bursa
- 29. Liquid insoluble in water
- 30. An eminence or projection
- M. Commit depredations
- 36. Grampus
- 37. Derive
- 38. Passessive pronoun
- 39. Asthma-wood
- 41. Bo III
- 42. Moist, hot compresses
- 44. And not
- 45. Sole 46. Plant used as a diuretic and cathartic
- 47. A king of Judah
- 48. Hydrophobic
- 49. In the time past 51. Gentle touch
- 54. An organized body of physicians (abbr.)
- 57. Avena
- 58. A cereal grain
- 59. Corded fabric
- 50. Inflammation of the membranes of the brain and spinal cord
- 63. Skin opening
- 64. Japanese physician who developed a method of resuscitation in asphyxia
- 65. Bird's home
- 66. Peculiar sensation ex-perienced in epilepsy
- 67. Relating to birth 68. Poems
- 69. Former Russian ruler

(Vol. 85, No. 7) July 1957

14 20 24 28 329 12 46 52 33 54 64 62

CONTRIBUTED BY JO PAQUIN

VERTICAL

- 1. Former dwellers in
- Nicaragua 2. Opprobrium
- 3. Whey 4. Question
- 5. Happen
- 6. Take from the breast
- 7. Go astray 8. Finger or toe (Gr.)
- 9. Largest voin
- 10. One of a Negro tribe In southern Nigeria 11. - majesty; a crime against sovereign power
- 12. Among (poetic) 13. Skin eruption
- 19. Charged atom
- 21. Dry, as wine
- 25. With Dr. Jenner's, his name is given to a quantitative test for serum phosphatase
- 26. Needed for the lawful practice of medicine
- 27. Mercuric oxide
- 29. The eyeball (poetic)
- 31. Relating to glanders
- 32. Wicked

- Depend
 Pin inserted in root canal of tooth to attach artificial crown
 The leaves of garden
- rue 36. Hawaiian birds
- (hyphan.)
- 37. Norse goddess of
- healing 39. Of a diseased region
- 40. Commonest Presenta-
- tion (Obstet., Abbrev.)
- 43 Fluid product of in-flammation
- 45. Rowing implement
- 47. Ray: (comb, form)
- 48. Girl's name
- 50. Scold persistently
- 51. Abnormal secs
- 52. Saw (Latin)
- 53. Pointed weapon 54. Egyption god
- 55. Great or large (profix)
- 56. Morphology (Abbrev.)
- 58. Extend upward
- 41. Greenland Eskimo
- 62. Spread for drying
- 63 Mike's companion in



To the Profession it has served with undivided responsibility for so many years . . . BARD-PARKER has devoted its scientific knowledge and the inimitable skill of its craftsmen in developing the finest surgical blade possible . . . a blade that meets the demand of the Profession for quality and economy.

The satisfaction of knowing you have chosen the best is yours when you use B-P RIB-BACK blades.

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BARD-PARKER COMPANY, INC.

Danbury, Connecticut

UNIFORMLY SHARP RIGID STRONG

the 'only' RIB-BACK BLADE

they know what they like



you know what they need for comprehensive vitamin protection

Deca-Mulcin

delicious orange-flavored teaspoon dosage of 10 nutritionally significant vitamins

- · assured stability, including B,,
- · non-sticky, free flowing
- · no refrigeration required
- · pouring lip bottles of 4, 8 and 16 oz.

Deca-Vi-Caps[®]

small easy-to-swallow capsules of 10 nutritionally significant vitamins

- · potency assured
- · inviting red color
- · store anywhere
- · bottles of 30 and 100

and for the dropper-dosage age - Specify Deca-Vi-Sol®

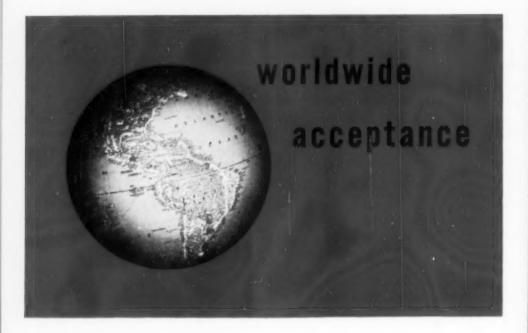
These three Deca Family Products have the same basic formulation and the same standard of comprehensive protection. The basic family name Deca is easy to remember and simplifies specification during the vital first decade.

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SYMBOL OF SERVICE IN MEDICINE

"MYSOLINE"

in epilepsy



Reports from 15 countries attest to the clinical effectiveness of "Mysoline" in grand mal and psychomotor attacks. These results are confirmed by three years of successful use in the United States. No irreversible toxic effects have been reported. When side effects such as drowsiness and ataxia occur, they are usually mild and transitory, tending to disappear as therapy is continued or dosage is adjusted.

Supplied: 0.25 Gm. scored tablets, bottles of 100 and 1,000.



AYERST LABORATORIES . NEW YORK, N. Y. . MONTREAL, CANADA

"Mysoline" is available in the United States by arrangement with Imperial Chemical Industries Ltd.

Doctor-it's up to you

to treat Obesity as a serious medical problem



RESYDESS

... able adjunct to obesity management

Far from being a subject for comic cartoons, obesity is recognized as an infamous contributor to a wide range of degenerative and organic diseases. Only you-employing weight-control agents such as dual-powered RESYDESS - can wean patients from excessive ingestion of food,

RESYDESS strikes at the underlying causes of obesity:

- 1. It quells hunger and elevates the mood 2. It relieves stress and anxiety tension bethrough the effective appetite-depressant, dl-Desoxyephedrine Hydrochloride.
 - lieved by many to be a primary reason for compulsive eating, through the potent tranquilizer Reserpine.

Tandem action of the teamed ingredients successfully checks the desire for excess food and simultaneously keeps the patient calm but alert.

Each RESYDESS tablet contains:

Reserpine

di-Desoxyephedrine Hydrochloride. ... B.O mg.

Send for literature and complimentary clinical supply



CHICAGO PHARMACAL COMPANY



8647 N. Ravenswood Ave. Chicago 40, III. Branch Office: 381 Eleventh St. San Francisco, Calif. Relaxes
without
impairing
mental
or physical
efficiency

...well suited for prolonged therapy The primary finding of these studies is that meprobamate ['Miltown'] alone ... produces no behavioral toxicity in our subjects as measured by our tests of driving, steadiness and vision."

Marquis, D. G., Kelly, E. L., Miller, J. G., Gerard, R. W. and Rapoport, A.: Ann. New York Acad. Sc. 67:701, May 9, 1957.

"Since it [meprobamate-'Miltown'] does not cloud consciousness or lessen intellectual capacity, it can be used... even by those busily occupied in intellectual work."

Keyes, B. L.: Pennsylvania M. J. 80:177, Feb. 1957.

"...the patient never describes himself as feeling detached or 'insulated' by the drug ['Miltown']. He remains completely in control of his faculties, both mental and physical..."

Sokoloff, O. J.: A.M.A. Arch. Dermat. & Syph. 74:392, Oct. 1858.

4. "It ['Miltown'] ... does not cloud the sensorium, and has a helpful somnifacient effect devoid of 'hangover'."

Kessler, L. N. and Barnard, R. D.: M. Times 84:431, April 1956.

"In anxiety and tension states, meprobamate relaxes without dulling cortical function to the same extent as the commonly-used barbiturates."

Rindskopf, W., Ravreby, M., Gutenkauf, C. and Sands, S. L.: J. Iowa M. Soc. 47:57, Feb. 1957.

Miltown

2-methyl 2-m-propyl-1, 3-propanediol dicarbamate—U, S. Patent 2,72: TRANQUILIZER WITH MUSCLE-RELAXANT ACTION MAL MEPS DISCOVERSO AND INTRODUCED BY WALLACE LABORATORIES

SUPPLIED: 400 mg. scored tablets 200 mg. sugar-coated tablets USUAL DOSAGE: One or two 400 mg. tablets t.i.d.

Literature and samples available on request
WWW WALLACE LABORATORIES, New Brunswick, N. J.

CH-5104



BOATING

Photographs with brief description of your hobby will be welcomed. A beautiful imported German apothecary jar will be sent to each contributor.

BOATING, from rowboats to large expensive cabincruisers, has become undoubtedly the fastest growing sport in our country in the past few years.

Inland waterways, lakes and bays provide ample playgrounds almost anywhere in the U.S.

But to enjoy watersports at their best, one has to be properly trained and must continue his studies in navigation, seamanship and other related subjects.

The United States Power Squadrons (U.S.P.S.), in existence since 1914, have combined the "activity of the mind and exercise of the body"—by presenting to its members an extensive educational program of studies and

teaching alternately—and a most enjoyable social program, as Boating Rendezvous, Boating contests and many other gatherings of clean, outdoor life and good companionship.

To achieve an advanced grade or a "Merritmark"—for a job "well done"—brings many hours of fun and relaxation to the weary mind of the busy physician during the winter months, while spring, summer and early fall give us the opportunity to apply our newly obtained knowledge for safer, better and happier boating!

H. W. Scheye, M. D. Baltimore 29, Md.

"True enjoyment comes from activity of the mind and exercise of the body. The two are ever united."

HUMBOLDT



now "... care of the man

rather than merely his stomach."

Milpath

Miltown® _ anticholinergic

controls

gastrointestinal dysfunction

at cerebral and peripheral levels

tranquilization without barbiturate loginess

spasmolysis without belladonna-like side effects

for duodenal ulcer • gastric ulcer • intestinal colic spastic and irritable colon • ileitis • esophageal spasm

O. I. symptoms of anxiety states

prescribe: 1 tablet t.i.d. at

mealtime and 2 at bedtime

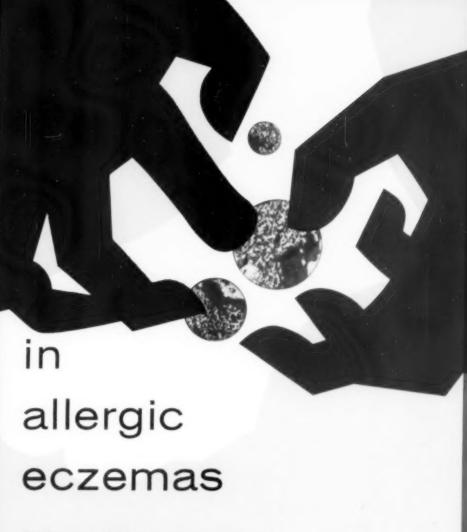
Formula:

Mültewn# {meprobamate} 400 mg. (2 - methyl - 2 - n - pwngr4. 3-prepanediol dicartamate) U. S. Patent 2.724,720 trifibevethyl isdide 25 mg. (1 - dichylamino - 1 - cyclobexyl - 1 - phenyl - 1 - yropama-ethiodide)

1 Welf & Welf. Human Gastrie Function

WALLACE LABORATORIES New Brunswick, N. J.

Literature and samples on request



Meti-Derm CREAM 0.5%

(METICORTELONE, free alcohol)

Meti-Derm OINTMENT 0.5%

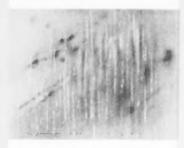
with Neomycin

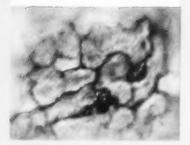
each in 10 Gm. tubes

Schering









excellent response in eczematous dermatoses

Meti-Derm CREAM 0.5%

(METICORTELONE, free alcohol)

water washable—stainless benefits allergic dermatoses, usually without irritation

Meti-Derm OINTMENT 0.5%

with Neomycin

5 mg. METICORTELONE and 5 mg. Neomycin Sulfate advantageous when infection is present or suspected

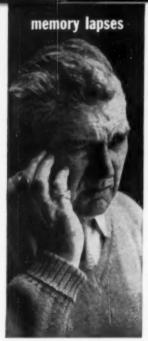
Each in 10 Gm. tubes

Meti-Deem,* brand of prednisolone topical.
MeticoeteLone,® brand of prednisolone.
*T.M.

ME-J-217

Schering









for middle-age slowdown

Plestran is indicated as an aid in restoration of vigor in middle-aged or elderly patients who complain of chronic fatigue...reduced vitality...low physical reserve...impaired work capacity... depression... muscular aches and pains... or cold intolerance. Such "signs of aging," far from being due to physiologic disturbances, may often result from endocrine imbalance, especially gonadal and thyroid dysfunction. 1-4 Plestran provides ethinyl estradiol (0.005 mg.); methyltestosterone (2.5 mg.); and Proloid®® (1/4 gr.)—hormones which help to correct endocrine imbalance and often halt or reverse involutional and degenerative changes. 1-4

Plestran restores work capacity and a sense of well-being, usually within 7 to 10 days. It improves nitrogen balance, leads to better muscle tone and vigor, enhances mental alertness,

*Purified thyroid globulin

helps to correct osteoporosis, senile skin and hair texture changes and relieves muscular pain.

The anabolic and tonic effects of the hormones in Plestran appear to be enhanced by combination so that small dosages are very effective. Combination also overcomes some of the disadvantages of therapy with a single sex hormone, such as virilization, feminization or withdrawal bleeding.⁵

Dosage: Usually one tablet daily; occasional patients may require two tablets daily, depending on clinical response.

Supplied in bottles of 100 and 500.

References: 1. McGavack, T. H.: Geriatrics 5:151 (May-June) 1950. 2. Masters, W. H.: Obst. & Gynec, 8:61 (July) 1956. 3. Kimble, S. T., and Stieglitz, E. J.: Geriatrics 7:20 (Jan.-Feb.) 1952. 4. Kountz, W. B., and Chieffi, M.: Geriatrics 2:344 (Nov-Dec.) 1947. 5. Birnberg, C. H., and Kurzrok, R.: J. Am. Geriatrics Soc. 3:656 (Sept.) 1955.

PLESTRAN

a metabolic regulator

WARNER-CHILCOTT

100 YEARS OF SERVICE TO THE MEDICAL PROFESSION



In the majority of 112 cases of acute, persistent or relapsing urinary tract infections "nitrofurantoin [FURADANTIN] was effective clinically, with a pronounced improvement, indicated by the appearance of the urine as well as by verbal commendation by the patient, within 24 to 36 hours . . . Some of these patients with seemingly impossible cases were cured of their infection."

FURADANTIN first because of these advantages: a specific for urinary tract infections • rapid bactericidal action • negligible development of bacterial resistance • nontoxic to kidneys, liver and blood-forming organs. AVERAGE DOSAGE: ADULTS—four 100 mg. tablets daily; 1 tablet during each meal and 1 on retiring, with food or milk. In acute, uncomplicated infections, 50 mg. q.i.d. may be prescribed. If patient is unresponsive after 2 to 3 days, increase dose to 100 mg. q.i.d.

CHILDREN-5 to 7 mg. per Kg. (2.2 to 3.1 mg. per lb.) per 24 hours.

SUPPLIED: Tablets, 50 and 100 mg. Oral Suspension (25 mg. per 5 cc. tsp.).

*Stewart, B. L., and Rowe, H. J. J. Am. M. Ass. 160 1221, 1956.



EATON LABORATORIES, NORWICH, NEW YORK

Who Is This Doctor?

He was born on March 19th, 1813, at Blantyre near Glasgow, the second in a family of six. Work, strong religious feelings and a high standard of morality were the principles on which he was brought up.

While still in his teens he resolved to dedicate his life to the alleviation of human misery and decided to obtain a medical education to be better qualified for such work.

He attended medical classes at Anderson College in winter and in summer listened to lectures on Divinity,

He received his medical degree in London at the age of 27. In the same month he was ordained, and as a missionary, embarked for Africa on December 8th, 1840.

In the spirit of missionary work, he lived among the natives and devoted himself to learning their language and customs. At the same time he studied the geology and natural history of the country.

In 1843, he established a mission at Mabotsa. Here he was attacked by a lion which crushed his left arm.

He traveled widely, explored large areas of the African continent, and in 1856, he was given an enthusiastic reception at the Royal Geographical Society where he was awarded a gold medal for his labors. Oxford and Glasgow conferred honorary degrees upon him.

Once, for a period of several years, the world believed him lost; the New York *Herald* sent an expedition to Africa to search for him. He was found but could not be persuaded to return.

Weakened by dysentery and recurrent malarial fever, he died on May 1st, 1873. The friendly natives buried their master's heart under a tree and set out with the dead body on a long and arduous journey to the coast. (The trip took five months.) The body was interred in Westminster Abbey on April 18th, 1874.

No single explorer has ever contributed so much to the knowledge of African geography as he did in his 30-years' work.

To Scottish school children he once expressed the motto of his life: "Fear God and work hard."

Do you know the doctor's name and the name of the person who headed the search expedition?

Can you name the doctor before turning to page 130a?

advance in potentiated multi-spectrum

OUTSHOOMSCIL SETTINGS IN COMMISSION OF MISSESSES

capsules

Signemycin V-the new name for multi-spectrum Sigmamycin – now buffered for higher antibiotic serum levels.

therapy-higher, faster levels of antibiotic activity



New added certainty in antibiotic therapy particularly for that 90 per cent of the patient population treated at home or office where susceptibility testing may not be practical.

Signemycin V Capsules provide the unsurpassed antimicrobial spectrum of tetracycline extended and potentiated to include even those strains of staphylococci and certain other pathogens resistant to other antibiotics. The addition of the buffering agent affords higher, faster antibiotic blood levels following oral administration.

Supplied:

Capsules containing 250 mg. (oleandomycin 83 mg., tetracycline 167 mg.), phosphate buffered.
Bottles of 16 and 100. *Trademark



Prizer Laboratories, Brooklyn 6, N. Y. Division, Chas. Pfizer & Co.

World leader in antibiotic development and production

Metrazol



In Senility, Geriatrics, Convalescence, Fatigue States, Debility.

DOSE. I or 2 tablets or teaspoonfuls METRAZOL Liquidum three or four times a day, starting with the larger dose for the first few weeks.

Metrazol®, brand of Pentylenetetrazol, a product of E. Bilhuber, Inc.

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Orange, New Jersey, U. S. A.

LETTERS TO THE EDITOR

MT Custom-made for the G. P.

I had the opportunity of reading two back copies of your MEDICAL TIMES, and the information I gleaned from them astounded me. The articles are brief and to the point, and are custommade for the G. P.

I would consider it a great favor to be placed on your mailing list, so that I may receive the magazine regularly.

B. B. NEUCHILLER, M.D. Woodstock, Ill.

MEDICAL TIMES is replete with the most modern information from cover to cover. The march of medicine is phenomenal and without your magazine it would be impossible to keep abreast of the times.

I wish to express my deep appreciation for the privilege of being on your mailing list.

H. AMEROY HARTWELL, M.D. Weehawken, N. J.

I have received two issues of the MEDICAL TIMES and find them very interesting. I thank you for your courtesy as well as for the nice accompanying letter.

> H. R. Freisinger, M.D. Warwick, N. Y.

> > MEDICAL TIMES

some appetites need a nudge ... and with Stimavite Tastitabs you can prod lag-Each STIMAVITE TASTITAB contains: L-lysine 15 mg. for amino-acid improved protein quality. Vitamin B12...20 mcg. for appetite and growth stimulation, Vitamin B:10 mg. for appetite stimulation, GOOD TASTING Vitamin Bs.....3 mg. for improved protein metabolism.

Stimavite® Tastitabs* STIMULATE (appetite growth

ging appetites and promote growth in younger patients, perk up the "picky" adult eater. Their delicious natural fruit flavor makes patient cooperation easy.

Vitamie C 25 mg. for better hemoglobin formation and (as sodium ascurbate) nucleic acid synthesis.

For the younger patient who doesn't like to eat, or who eats out of balance, and for the adult who eats like a bird, one or two Stimavite Tastitabs daily, at mealtime. Can be chewed, swallowed whole, allowed to melt in the mouth, or dissolved in liquids.

Bottles of 30 and 100 Tastitabs.



Chicago 11, Illinois PEACE of mind ATARAX &

anti-inflammatory....bactericidal

'CORTISPORIN'

For infected, or potentially infected, inflammatory conditions of the eye (anterior segment), ear and skin

VIRTUALLY NON-SENSITIZING

'CORTISPORIN' brand OINTMENT

Each Gm. contains: 'Aerosporin'® Sulfate Polymyxin B Sulfate 5,000 Units; Bacitracin 400 Units; Neomycin Sulfate 5 mg.; Hydrocortisone (free alcohol) 10 mg. (1%).

Available in applicator tip tubes of 1/4 oz. and 1/2 oz.

'CORTISPORIN' brand OTIC DROPS

Each cc. contains: 'Aerosporin' Sulfate Polymyxin B Sulfate 10,000 Units; Neomycin Sulfate 5 mg.; Hydrocortisone (free alcohol) 10 mg. (1%). Available in sterile dropper bottles of 5 cc.



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IN LOW BACK PAIN

* SEE Other side

flexin

consistently effective in low back pain

"...Of 90 patients with low back pain and other muscular conditions...
67 (74 per cent) showed a good response..."

"...17 of...20 patients with post-traumatic muscle spasm of the low back had excellent or good responses."²

"In acute and chronic recurrent low back syndrome, seven of eight patients showed visible objective improvement."

Bibliography

(1) Johnson, H. J., Jr.: To be published. (2) Wallace, S. L.: To be published. (3) Settel, E.: Am. Pract. & Digest Treat. 8:443, 1957.

How Supplied

Pink, Enteric Coated tablets (250 mg.), bottles of 36. Yellow, scored tablets (250 mg.), bottles of 50.

*U.S. Potent Pending



Laboratories, Inc. Philadelphia 32, Pa.

11057



Mediquiz

These questions are from a civil service examination recently given to candidates for physician appointments in municipal government. Like to see how you would fare? Answers will be found on page 185a.

1. In a fracture of the femoral neck, the one of the following most likely to predispose to bony union is: (A) a varus deformity of the head fragment; (B) a valgus deformity of the head fragment; (C) a normal relationship between head and neck; (D) external rotation of the neck on the head.

2. Of the following nerves, the one most commonly injured in a dislocation of the shoulder is: (A) median; (B) axillary; (C) radial; (D) ulnar.

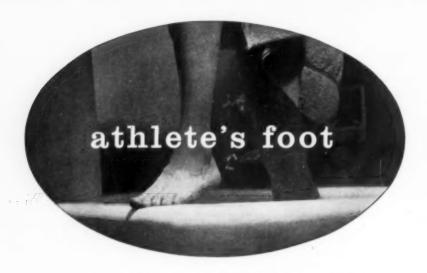
3. Persistent wrist pain on forcing the extremes of pronation and supination following a Colles' fracture can most frequently be relieved by an operative procedure on the: (A) radius; (B) ulna; (C) radiocarpal ligaments; (D) pronator quadratus.

4. During the first six months following a fractured elbow and after the primary injury has healed, the therapeutic program of choice for the management of progressive stiffening of the joint accompanied by the roentegenological appearance of calcification in the region of the brachialis muscle is:
(A) normal use within pain limits;
(B) restriction of use; (C) physiotherapy and passive stretching of the joint; (D) complete rest of the joints by use of a splint.

5. A patient is admitted with an incomplete transverse fissure fracture through the shaft of the femur. X-rays demonstrate the bone to be somewhat bowed with coarse trabeculations and a thickened cortex. He also complains of deafness and timitus. The condition most likely to be found responsible for the latter complaint is:

(A) Paget's disease; (B) Addison's disease; (C) hyperthyroidism; (D) rickets.

6. Following a penetrating wound at the base of the neck in the posterior cervical triangle, it is noted that there is a drooping of the shoulder with a wing scapula rotated downwards and outwards, and there is an abnormal contour of the base of the neck. The most likely lesion is damage to the:



carrier unto himself

Once he is infected with athlete's foot, he is likely to remain a "carrier unto himself," even without re-exposure. Daily routine application of Desenex protects against reinfection and recurrence.

fast relief from itching prompt antimycotic action continuing prophylaxis





For most effective and convenient therapy and continuing prophylaxis, use Desenex as follows:

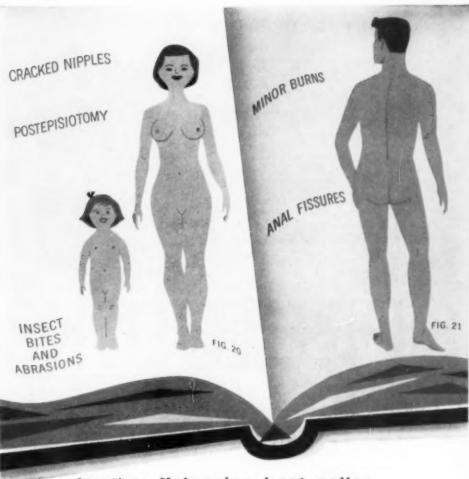
AT NIGHT the Ointment (zincundecate) -1 oz. tubes and 1 lb. jars.

DURING THE DAY the Powder (zincundecate) $-1\frac{1}{2}$ oz. and 1 lb. containers.

AFTER EVERY FOOT BATH the Solution (undecylenic acid) -2 fl. oz. and 1 pt. bottles. Use only when skin is unbroken.

In otomycosis, Desenex solution or ointment. Write for free sample supply to Professional Service Department.

MALTBIE LABORATORIES DIVISION . WALLACE & TIERNAN, INC. . Belleville 9, N. J.



Another Xylocaine best seller ...

Never before has a surface anesthetic provided such prompt, effective, and long-lasting action as Xylocaine Ointment. Its water-soluble, nonstaining, carbowax base melts on contact with the skin, thus releasing the anesthetic for intimate action on the tissues.

Xylocaine Ointment is nonirritating, nonsensitizing, and does not inhibit the healing processes.



Astra Pharmaceutical Products, Inc., Worcester 6, Mass., U.S.A.

for better doctor-patient relationship

XYLOCAINE

OINTMENT 5% ASTRA

specifically for reduction of overweight



PRELUDIN

(brand of phenmetrazine hydrochloride)

"...a highly effective and safe appetite suppressant..."

Based on clinical reports, PRELUDIN produces more than twice the weight loss achieved by patients receiving a placebo.² It is singularly free of tendency to produce serious side actions, as well as stimulation.¹⁻³ PRELUDIN imparts a feeling of well-being that encourages the patient to cooperate willingly in treatment.¹⁻³

The reduced incidence of side actions with PRELUDIN makes losing weight more comfortable for the average patient, facilitates treatment of the complicated case and frequently permits its use where other anorexiants are not tolerated.³

Recommended Dosage: One tablet two to three times daily one hour before meals. Occasionally smaller dosage suffices. On theoretical grounds, PRELUDIN should not be given to patients with severe hypertension, thyrotoxicosis or acute coronary disease.

(1) Halt, J. O. S., Jr.; Dallas Med. J. 42:497, 1956. (2) Gelvin, E. P.; McGavack, T. H., and Kenigsberg, S.; Am. J. Digest. Dis. 1:155, 1956. (3) Natenshan, A. L.; Am. Pract. & Digest Treat. 7:1456, 1956.

PRELIDINE (brand of phenmetrazine hydrochlaride). Scored, square, pink tablets of 25 mg. Under license from C. H. Boehringer Sohn, Ingelheim.

GEIGY Ardsley, New York





- (A) long thoracic nerve of Bell; (B) dorsal scapula nerve; (C) spinal accessory nerve; (D) supra scapula nerve.
- 7. In a postero-lateral herniation of a lumbar intervertebral disk the nucleus pulposus most often ruptures the:
 (A) ligamentum flavum; (B) annulus fibrosus; (C) dentate ligament; (D) interspinous ligament.
- 8. Symptoms indicating operation for traumatic subdural hematoma most frequently occur: (A) at any time from hours to months after injury; (B) a few hours after a head injury; (C) a few months after injury; (D) within the first few hours, or a few months after injury.
- 9. The one of the following traumatic lesions in which a fracture of the skull is nearly always present is (A) contusion of the brain; (B) subarachonoid hemorrhage; (C) laceration of the brain; (D) hemorrhage from the middle meningeal artery.
- 10. A patient is very ill with pneumonia despite large doses of antibiotics. Suddenly he develops weakness of the left arm and leg and becomes semi-stuporous. The stupor gradually clears and the weakness of the left side improves a little, but after three weeks a papilledema of four diopters appears. The patient is probably suffering from: (A) meningitis; (B) brain abscess; (C) cerebral thrombosis with softening; (D) cerebral hemorrhage.

- 11. An adult develops over a period of months weakness and numbness of the entire left side of his face. He has been almost totally deaf in the left ear for five years. The most likely diagnosis is a: (A) tumor of the eighth nerve; (B) neuritis; (C) chronic otitis media or petrositis; (D) cerebral tumor.
- 12. Following a bullet wound of the upper third of the arm, a patient shows, in addition to other signs, atrophy of the thenar eminence and inability to flex the distal phalanx of the index finger. He most likely sustained an injury of the: (A) brachial artery; (B) ulnar nerve; (C) median nerve; (D) radial nerve.
- 13. A male, 50 years of age, experienced a sereve pain in the left inguinal region while lifting a heavy object. Examination revealed a direct inguinal hernia. Of the following, the anatomical structure which was primarily involved is the: (A) external oblique fascia; (B) transversalis fascia; (C) transversus abdomenus muscle; (D) conjoined tendon.
- 14. A normal knee joint in ten degrees of flexion shows some lateral instability. Of the following, this instability is due to injury of: (A) cruciate ligaments; (B) fibular collateral ligament; (C) tibial collateral ligaments; (D) tibial collateral ligaments and cruciate ligaments.
 - 15. All structures of the anterior as-



"...a calmative effect...superior to anything we had previously seen with the new drugs."*

true calmative XX nostyn Ectylurea, AMES

the power of gentleness

allays anxiety and tension without depression, drowsiness, motor incoordination

Nostyn is a calmative—not a hypnotic-sedative—unrelated to any available chemopsychotherapeutic agent • no evidence of cumulation or habituation • does not increase gastric acidity or motility • unusually wide margin of safety—no significant side effects

25057

dosage: 150-300 mg. (V_2 to 1 tablet) three or four times daily, supplied: 300 mg. scored tablets, bottles of 48 and 500.

*Ferguson, J. T., and Linn, F. V. Z.: Antibiotic Med. & Clin. Therapy 3:329, 1956.



dosage regimen / excellent taste / wide acceptance by children and mothers mothers / convenient dosage regimen / excellent taste / wide acceptance by chi rient dosage regimen / excellent taste / wide acceptance by children and mother nd mothers / convenient dosage regimen / excellent taste / wide acceptance by convenient dosage regimen / excell ceptance by children ient dosage children and mother for sustained nd mothe wide acceptance by wide-spectrum en and mothers dosage antibacterial therapy nothers / c ecceptance by chil LIPO GANTRISIN by children and convenient and mothers dosage regit ptance by chi mothers / con therapeutic blood levels and mothe ient dosage red mothers / cor eptance by for 24 hours with only two oral doses y children convenient de prance by children and mother ent dosage regime wosage regimen / excellent taste / wide acceptance by nd mothers / conve dosage regimen / excellent taste / wide acceptance by children and mothers others / convenient dosage regimen / excellent taste / wide acceptance by child convenient dosage regimen / excellent taste / wide acceptance by children and dosage regimen / excellent taste / wide acceptance by children and mothers nothers / convenient dosage regimen / excellent taste / wide acceptance by chi

LIPO GANTRISIN ROCHE

assures adequate blood levels around-the-clock . . . with only two doses daily

Description: Lipo Gantrisin provides the wide antibacterial spectrum of Gantrisin in a special vehicle. In this free-flowing, readily digestible vegetable oil emulsion the action of the drug is prolonged. With each dose therapeutic blood and urine levels of highly soluble Gantrisin are maintained over a period of twelve hours.

Each teaspoonful (5 cc) of Lipo Gantrisin contains the equivalent of 1 Gm of Gantrisin. Lipo Gantrisin can be employed without alkalies and without danger of renal blocking or secondary fungus growth.

Indications: Systemic and urinary infections due to streptococci, staphylococci, pneumococci, H. influenzae, K. pneumoniae, meningococci, E. coli, B. proteus, B. pyocyaneus, A. aerogenes, B. paracolon, and Alcaligenes fecalis.

Dosage: Teaspoonfuls every 12 hours

Children:

Adults:

3

If required, the initial dose may be twice the amount of subsequent doses. Treatment should be continued until temperature has been normal for at least 48 hours.

Supplied: Bottles of 4 and 16 oz.

Lipo Gantrisin® Acetyl-brand of acetyl sulfisozazole in vegetable oil emulsion

ROCHE

HOFFMANN-LA ROCHE INC .

NUTLEY . B

pect of the left wrist, 3 inches proximal to the flexor crease, are severed by a knife. Preparations for surgical repair have been completed. The wrist is viewed in the anatomical position. The structures are identified prior to repair. The flexor carpi radialis muscle lies: (A) anterior to the tendons of the flexor digitorum sublimis; (B) posterior to the tendons of the flexor digitorum sublimis; (C) lateral to the tendons of the flexor digitorum sublimis; (D) medial to the tendons of the flexor digitorum sublimis; (D) medial to the tendons of the flexor digitorum sublimis.

16. In the normal anatomical relationship of the bones to the wrist joint, the greater multangular (trapezium) articulates with: (A) lunate and third metacarpal; (B) lunate and second metacarpal; (C) navicular and first metacarpal; (D) triquetrum and lunate.

17. A patient with a third degree burn of the dorsum of the hand and fingers has the greatest assurance of a good functional result, if the treatment followed is: (A) pressure dressings with skin grafting in 4 to 6 weeks; (B) daily dressings with antibiotic ointment; (C) daily active motion in warm saline with skin grafting in 3 to 4 weeks; (D) daily active motion in warm saline with skin grafting in 10 to 14 days.

18. Of the following places of work, cases of byssinosis are most likely to be found in: (A) mines; (B) foundries; (C) wood-working shops; (D) cotton mills.

19. A simple complete fracture of the upper third radius is sustained by a young adult. Closed reduction is attempted. To obtain an adequate reduction, the arm and hand should be held in: (A) pronation; (B) supination; (C) mid-position; (D) extension.

20. At the present time a number of substances are used in place of lead in the manufacture of paints. Of the following, the one which is not used for this purpose is: (A) litharge; (B) zinc oxide; (C) lithopone; (D) titanium oxide.

21. In determining the source of an outbreak of food poisoning traced to a particular meal, the most important step is to: (A) examine bacteriologically every item of food served at the meal; (B) determine the attack rates for each food served for those who partook of the food and those who did not partake of the food; (C) examine the sools of all who became ill; (D) examine the stools of all food handlers who prepared the meal.

22. Orthotolidine is commonly used in testing for: (A) bacteria in milk; (B) bacteria in water; (C) arsenic in food; (D) chlorine in water.

23. Gram for gram the one of the following foods which is the richest source of nicotinic acid is: (A) banana; (B) corn meal; (C) calf liver; (D) spinach.

have you made the

tastetest?



INTROMYCIN

is the truly palatable antidiarrheal...

and your patients recover more rapidly

because . formed stools are produced 5 times faster1 • water loss is better controlled . electrolytes are replenished • bacterial pathogens are inhibited

> INTROMYCIN ... the only combination of Carob powder (Ceratonia siliqua) ... for prompt relief of diarrhea symptoms

and

Neomycin/Streptomycin...2 clinically established intestinal tract antibacterials

1. Abella, P. U.: J. Pediat. 41:82, 1952

Available in 75 Gram (21/2 oz.) jars



NTROMYCI

PITMAN-MOORE COMPANY

DIVISION OF ALLIED LABORATORIES, INC. INDIANAPOLIS 6, INDIANA

ACHROCIDIN is indicated for prompt control of undifferentiated upper respiratory infections in the presence of questionable middle ear, pulmonary, nephritic, or rheumatic signs; during respiratory epidemics; when bacterial complications are observed or expected from the patient's history.

Early potent therapy is provided against such threatening complications as sinusitis. adenitis, otitis, pneumonitis, lung abscess, nephritis, or rheumatic states.

Included in this versatile formula are recommended components for rapid relief of debilitating and annoying cold symptoms.

Adult dosage for ACHROCIDIN Tablets and new, caffeine-free ACHROCIDIN Syrup is two tablets or teaspoonfuls of syrup three or four times daily. Dosage for children according to weight and age.

Available on prescription only

symptomatic relief ... plus!

Tablets and Syrup



Each tablet contains:

ACHROMYCIN® Tetracycline

Phenacetin

Caffeine

Salicylamide Chlorothen Citrate

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125 mg. 120 mg.

30 mg.

150 mg. 25 mg.



dual action...
relieves tension—mental and muscular

SHIELD-SHAPED TABLET



meprobamate Licensed under U.S. Pat. No. 2,724,720 24. In a trichinosis law suit, the item of food which was most likely the cause of trichinosis was: (A) raw ground beef; (B) pork processed under federal inspection for consumption without additional cooking; (C) federally inspected fresh ham eaten raw; (D) homemade thoroughly cooked sausage.

25. A veteran with known and treated schistosomiases acquired on Leyte develops, two years later, convulsions and signs of an expanding intracranial lesion. This is probably: (A) a malignant brain tumor; (B) a hydatid cyst; (C) schistosomiases of the brain; (D) an amebic abscess.

26. Aneurysm of the abdominal aorta is usually caused by: (A) syphilis; (B) Erdheim's medial necrosis; (C) arteriosclerosis; (D) trauma.

27. In chronic constrictive pericarditis the end diastolic filling pressure in the right ventricle, compared to normal, is: (A) decreased; (B) the same; (C) increased; (D) variable.

28. Lipping and osteophyte formation of the spine by x-ray examination is characteristic and diagnostic of (A) Marie Struempell spondylosis or rheumatoid arthritis of the spine; (B) gonorrheal arthritis of the spine; (C) metastatic invasion of the spine; (D) osteoarthritis of the spine.

In the Wolff-Parkinson-White syndrome, the paroxysmal tachycardia

which occurs usually has its origin in:
(A) His's bundle; (B) the ventricles;
(C) Kent's bundle; (D) the auricles.

30. In a patient with evidence of obstructive jaundice, a palpable enlargement of the gall-bladder suggests: (A) an obstruction of the common duct due to extrinsic pressure; (B) carcinoma of the gall-bladder; (C) calculus in common duct; (D) suppurative cholangitis.

31. In acute infectious hepatitis with jaundice, an increasing urobilinogenuria is evidence of: (A) complicating extrahepatic obstruction; (B) progressive liver necrosis; (C) diminishing intrahepatic obstruction; (D) marked intrahepatic obstruction.

32. A thirty-two-year-old man with an eight-year history of peptic ulcers is seen in the hospital, three hours after a copious hematemesis. This is his first bleeding episode. His skin and mucous membranes are pale; extremities are warm. Pulse rate is 90 per minute, regular and good quality. blood pressure is 116 over 70. hematocrit is 43%, hemoglobin is 12.6 grams, the RBC is 3,800,000. The preferred initial treatment would be: (A) blood transfusion 500 cc: (B) plasma transfusion 500 cc; (C) either (A) or (B), and 1000 cc of 5% glucose in saline by clysis; (D) sedation and the initiation of a modified feeding regimen.

33. In an indirect inguinal hernia

Concluded on page 74a



a preliminary report of profound significance concerning new and broadly ramified uses for

MARSILID 'Roche'

The psychic effect of Marsilid is unparalleled. Neither a "tranquilizer" nor a psychomotor stimulant in the usual sense, Marsilid nevertheless has been shown to possess profound psychodynamic activity with an extraordinary potential for a large segment of the emotionally disturbed population.

what Marsilid is - An isopropyl derivative of isonicotinic acid hydrazide, Marsilid appears to be an amine-oxidase inhibitor, with apparently unique effect as a regulator of serotonin and other neurotropic enzyme activity.

what Marsilid does - Under the influence of Marsilid, severely depressed and regressed apathetic individuals have regained the joy of living, with renewed vigor, activity and interests.

why Marsilid is different - Marsilid characteristically achieves eudaemonia a feeling of healthy well-being - rather than an abnormal state of euphoria. In properly adjusted dosage, it does not produce motor restlessness or irritability, does not depress but may actually stimulate the appetite. Marsilid does not elevate blood pressure.

the Marsilid potential: depressed patients in private practice - Ambulatory, nonpsychotic individuals who are depressed and withdrawn, state that they "again get enjoyment out of life" with Marsilid therapy. Although lesions show only minimal or no changes, patients with chronic debilitating disorders - e.g., rheumatoid arthritis - experience increased vitality and appetite, weight gain, and the return of a sense of well-being; chronic symptoms are better tolerated, less a cause for concern.

the Marsilid potential: institutionalized, psychotic patients - Long-term psychotic patients with severe depression or regression untouched by any previous therapy have shown a heartening response to Marsilid. In some instances, even "deteriorated" schizophrenics of the catatonic and hebephrenic types out of contact with their environment for many years - have become alert, responsive and sociable under Marsilid treatment.

Clinical trials now under way will further delineate the role of this significant new development in therapeutics.

For references and complete information concerning dosage, indications, side effects, and contraindications, write V. D. Mattia, Jr., M.D., Director of Medical Information, Hoffmann-La Roche Inc, Nutley 10, New Jersey.

MARSILID® PHOSPHATE - brand of iproniazid phosphate Supplied in scored tablets of 50 mg., 25 mg. and 10 mg.



ROCKE Original Research in Medicine and Chemistry

the relation of the sac at the neck to the deep epigastric artery is that the sac lies: (A) lateral to the artery; (B) medial to the artery; (C) posterior to the artery; (D) anterior to the artery.

34. The effect of prolonged ascorbic acid depletion in a healing wound is: (A) increase of collagen and reticulum: (B) no increase of collagen formation: (C) lack of collagen and reticulum: (D) no change in reticulum.

35. The one of the following conditions with which osteitis fibrosa cystica is usually associated is: (A) hyperthyroidism; (B) hyperparathyroidism; (C) Addison's disease; (D) hypothyroidism,

36. A sixty-year-old man who has been a marble cutter develops dyspnea. becomes weak, and loses weight, but has no fever. X-ray of the chest shows widely scattered stringy and nodular lesions in both lungs. The probable diagnosis is: (A) (hematogenous tuberculosis); (B) pneumonoconiosis; (C) primary cancer of the lung; (D) metastatic carcinoma.

ARACORTO

THREE TO FIVE TIMES AS EFFECTIVE AS HYDROCORTISONE

supplied: 5 mg. and 2.5 mg. scored tablets; bettles of 30 and 100.



In <u>Impetigo</u> and other topical infections[†]



NEO-POLYCIN*

(PITMAN-MOORE)

... provides three preferred topical antibiotics, neomycin, polymyxin and bacitracin in the unique Fuzene* (polyethylene glycol diester) base ... which releases more neomycin, more polymyxin and more bacitracin than do ordinary grease-base ointments.

†Clinically effective in pyoderma, folliculitis, paronychia, sycosis barbae, and also secondary bacterial infections complicating treatment of burns, eczemas, contact dermatitis, seborrhea, acne, psoriasis, varicose ulcers and neurodermatitis.

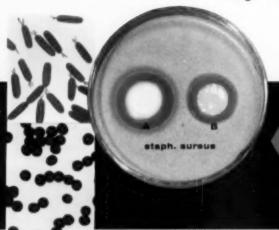
Miscibility of Neo-Potycin in aqueous medium means greater release of antibiotics into lesions.



Poor miscibility permits only limited release of antibiotics from grease-base ointments.

visual evidence of GREATER ANTIBIOTIC RELEASE

by NEO-POLYCIN



The greater release of antibiotics from Neo-Polycin results in greater antibacterial effect. Compare the zones of inhibition created by (A) Neo-Polycin, and (B) by a topical antibiotic ointment in a grease-base.

NEO-POLYCIN is effective against the entire range of bacteria commonly found in cutaneous lesions. It diffuses readily into tissue exudates, and is active in the presence of blood and pus. Neo-Polycin has an extremely low index of sensitization, and is nonirritating to tissue.

Each gram of Neo-Polycin Ointment contains 3 mg. of neomycin, 8000 units of polymyxin B sulfate and 400 units of bacitracin in the unique Fuzene base. Supplied in 15 Gm. tubes. (Also supplied as Neo Polycin-HC, containing 1% hydrocortisone acetate, in 5 Gm. tubes.)

Neo-Polycin and Neo Polycin-HC ophthalmic ointments (anhydrous, lanolin-petrolatum base) are supplied in ½ oz. tubes.

PITMAN-MOORE COMPANY

Division of Allied Laboratories, Inc.

INDIANAPOLIS 6, IND.

My patients complain that the pain tablets I prescribe are too slow-acting... they usually take about 30 to 40 minutes to work.

Why don't you try the new codeine derivative that's combined with APC for faster, longer-lasting pain relief?

CLINICAL

What is it... how fast does it act?

It's Percodan'-relieves pain in 5 to 15 minutes, with a single dose lasting 6 hours or longer.

How about side effects?

No problem. For example, the incidence of constipation with Percodan' is rare.

Sounds worth trying — what's the average adult dose?

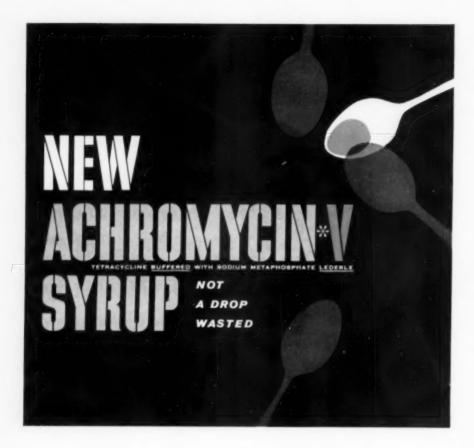
One tablet every 6 hours. That's all.

Where can I get literature on Percodan? Just ask your Endo detailman or write to:



ENDO LABORATORIES

Richmond Hill 18, New York



Youngsters really go for the taste-true orange flavor of Achromycin V Syrup. But this new syrup offers more than "lip-service" to your junior patients. It provides the new benefits of RAPID-ACTING, phosphate-buffered Achromycin V—

a fasteracting oral form accelerated absorption in the gastrointestinal tract

 earlier, higher peaks of concentration in body tissue and fluid

quicker control of a wide variety of infections

unsurpassed true broad-spectrum action

minimal side effects

· well-tolerated by patients of all ages.

ACHROMYCIN V SYRUP: aqueous, ready-to-use, freely miscible. 125 mg. tetracycline per 5 cc. teaspoonful phosphate-buffered.

DOSAGE: 6-7 mg. per lb. of body weight per day.

*Reg. U. S. Pat. Off.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK Leder



MODERN MEDICINALS

These brief résumés of essential information on the nawer medicinals, which are not yet listed in the various reference books, can be pasted on file cards and a record kept. This file can be kept by the physician for ready reference.

- Albustix, Ames Company, Elkhart, Indiana. Reagent strips for detection of albumin in the urine. Presence of protein is indicated by a color change on the strip after it has been wet. Sup: Bottles of 120.
- Cathocillin Forte, Merck Sharp & Dohme, Division of Merck & Co., Philadelphia, Pennsylvania. Double-strength form of Cathocillin. Each capsule contains 150 mg. potassium penicillin G and sodium novobiocin. Indicated in a variety of infectious conditions, Dose: As directed by physician. Sup: Bottles of 16 and 100.
- Cathomycin Calcium Syrup, Merck Sharp & Dohme, Division of Merck & Co., Inc., Philadelphia, Pennsylvania. Pleasantly flavored preparation, each 5 cc. of which contains 125 mg, of novobiocin. Indicated for pediatric use in the treatment of certain infections, especially those caused by the strains of staphylococci resistant to other antibiotics. Dose: As directed by physician, Sup: Bottles of 60 cc. and one pint.
- Compazine 10 Mgm., Smith, Kline & French Laboratories, Philadelphia I, Pennsylvania. New strength tablets

providing easier dosage adjustments. Indicated for use as a tranquilizer, providing greater freedom from drowsiness and depression as well as rapid control of nausea and vomiting.

Dose: I tablet three times a day or as directed by physician. Sup: Bottles of 50 and 500.

- Ecolid. Ciba Pharmaceutical Products. Summit, New Jersey. Two new forms now available tablets of 10 mg. chlorisondamine chloride and parenteral solution containing 5 mg. chlorisondamine chloride per ml. Indicated for treatment of patients with moderate to severe hypertension. Dose: As directed by physician. Sup: Tablets in bottles of 100 Rotocotes and solution in 1-ml, ampuls in cartons of 5.
- Estradurin, Ayerst Laboratories, New York 16, New York, Brand of polyestradiol phosphate, a new long-acting estrogen that insures sustained estrogen activity for at least two to four weeks with a single intramuscular injection. Indicated in the treatment of prostatic carcinoma. Dose: As directed by physician. Sup: In packages providing one Secule containing 40 mg. of polyestradiol phosphate, and one 2 cc. ampul of sterile diluent.

-Continued on page 78a

Marsilid, Hoffmann-La Roche Inc., Nutley, New Jersey, Iproniazid. For treatment of mental depression; stimulation of appetite and weight gain in debilitated patients: stimulation of wound healing in draining sinuses; adjunctive therapy in rheumatoid arthritis when associated with depressed psychomotor activity. Dose: As directed by physician, Sup: Scored tablets of 50 mg., 25 mg., and 10 mg. in bottles of 100 and 1000.

Milpath, Wallace Laboratories, New Brunswick, New Jersey. 400 mg. of Miltown and 25 mg. of tridihexethyl iodide. For therapy of gastric and duodenal ulcer, spastic and irritable colon, ileitis, esophageal spasm, intestinal colic and anxiety neuroses with vague gastrointestinal complaints. Dose: I tablet three times daily with meals, and 2 at bedtime. Sup: Bottles of 50 tablets.

Milprem, Wallace Laboratories, New Brunswick, New Jersey, 400 mg. of Miltown and 0.4 mg. conjugated estrogens (equine). For psychologic and physiologic treatment of the menopause, Dose: As directed by physician. Sup: Bottles of 60 tablets.

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Paracortol, Parke, Davis & Co., Detroit 32, Michigan, Scored tablets, each containing either 5 mg. or 2.5 mg. of prednisolone. Indicated for treatment of rheumatoid arthritis. **Dose:** As directed by physician, **Sup:** Bottles of 30 and 100.

Pathibamate, Lederle Laboratories, Division of American Cyanamid Co... Pearl River, New York, Yellow tablets, each containing 25 mg. Pathilon tri-dihexethyl iodide and 400 mg. meprobamate. Indicated for treatment of disorders of the g.i. tract along with the associated anxiety and tension. Dose: I tablet three times a day at mealtime, 2 tablets at bedtime. Sup: Bottles of 100 and 1000.

Peganone, Abbott Laboratories, North Chicago, Illinois. Tablets containing either 250 mg, or 500 mg. Ethotoin. Indicated for controlling grand mal seizures and, to a lesser extent, for controlling psychomotor, petit mal, and petit mal variant seizures. Dose: As directed by physician. Sup: Either size in bottles of 100 and 1000.

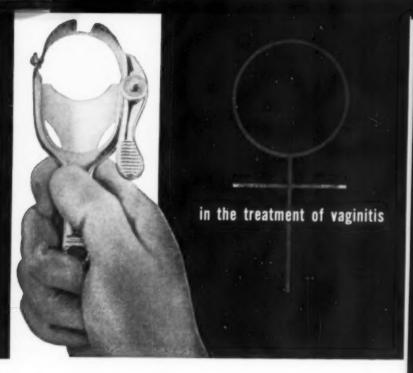
Pentrasine Tablets, McNeil Laboratories, Inc., Philadelphia 32, Pennsylvania. Each tablet contains 10 mgm. pentaerythritol tetranitrate, 10 mgm. butisol sodium, and 0.05 mgm. reserpine, Indicated for treatment of patients with angina pectoris to reduce severity and frequency of angina attacks. Dose: 4 tablets daily, before meals and at bedtime. Sup: Bottles of 100 and 1000,

Premarin with Meprobamate,
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Supplied in 1½ oz. tube with 6 disposable applicators. Instructions for use are included with each package.

*Gardner, H. L., and Dukes, C. D.: Am. J. Obst. & Gynec. 69:962 (May) 1955.

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Simplified dosage* to prevent Angina Pectoris

Metamine Triethanolamine trinitrate biphosphate, LEEMING, 10 mg. Sustained

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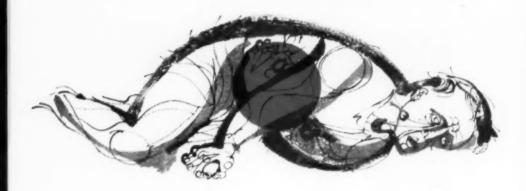


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Primum Non Nocere

"First do no harm"

JAMES M. STEELE, M.D., F.A.C.P.*
Sayre, Pennsylvania

Throughout the ages the responsibility of the physician to his patient has been one of the most solemn interpersonal relationships. The sick man must, of necessity, entrust his health and his very life to the discretion of his medical attendant and attests to this confidence in every pill or dram that he consumes under the doctor's direction. Although not regarding any physician as infallible, the patient assumes his physician has an average degree of professional integrity, together with some interest and understanding of his patients' problems.

To fulfill this trust adequately, good intentions are unfortunately not enough. An ever increasing store of medical knowledge and some judgment in the application of accepted principles are required, as well as some other characteristics. To err is human, but errors in this field are notably costly in life and must be held to a minimum. A proper sense of humility is necessary for analysis of the erroneous nature of past practices and the resolution to correct them; without it, complacency inactivates the learning process and perpetuates habitual mistakes. This

situation is reprehensible and doubly dangerous in that the authoritative air often seems to develop in direct proportion to the degree of ignorance, a mathematical formula of which most patients seem unaware. Ergo, the most dangerous doctor often has the largest practice,

This article is not designed to reclaim the few incorrigibles in our ranks—the drunkard, the avaricious charlatan or the unregenerate ignoramus—who are not likely to read it in any event. We only aspire to remind sober, respectable physicians, who never expect to attain perfection, that ceaseless struggle toward that goal is still worthwhile for its own sake and that with some thought costly errors can be reduced.

Justice Holmes used to say that no error ever appeared so bad until it became irretrievable; certainly, some classes of mistakes seem worse than others. Errors of omission, as a rule, are serious enough, often being euphemistically attributed to conservatism

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whereas they may be in reality a manifestation of plain obstinacy. Much more disastrous, usually, are the medical errors of commission by which through the agency of ill-considered therapeutic or diagnostic measures the patient with a mild or self-limiting illness is done incalculable harm.

Penicillin is justly termed a wonder drug but our journals are filled with reports of adverse responses varying from prolonged urticarial reactions or thrombocytopenic purpura to necrotizing angiitis resembling periarteritis nodosa and even acute anaphylaxis with fatal termination. The total reaction rate to penicillin is estimated from two to ten per cent. A similar situation exists with all of the antibiotics and sulfonamides. Assuming for the moment that these drugs are of benefit in the common cold, are we justified in taking such chances in a disease with such low morbidity and no mortality?

Never does a week pass that we do not see people with joint complaints in varying degree who have been given steroids on their first visit to a doctor without any apparent attempt at a definitive diagnosis or treatment with more conservative measures. Symptomatic therapy is often warranted but these powerful metabolic alteratives are hardly within that class of drugs. We know of the lowered resistance to infection and the osteoporosis sometimes resulting in pathologic fractures which continued use of these substances engender, but who can estimate the fatalities from minor accidents or other stresses where a hypoplastic adrenal cortex resulting from corticosteroid therapy fails to respond to the occasion?

Admittedly, the etiological role of estrogens in carcinoma of the breast is

not as yet established, but while there remains a shadow of a doubt are we justified in their indiscriminate use for minor menopausal symptoms?

Greenwalt has recently warned that "cosmetic transfusions" for pallor and minor grades of anemia hardly seem justified when one considers the risks of reactions and homologous serum jaundice.

The surgeons are decidedly not exempt from this criticism. Oophorectomies, hysterectomies and tubal ligations performed lightheartedly have often resulted in irrevocable misery for the patient.

These are only a very few examples of the current trend toward abuse of valuable but potentially harmful therapeutic agents. When warnings abound, why do respectable doctors still persist in these practices?

Probably one reason is habituation to the heavy yoke of responsibility which the physician wears; without some degree of inuredness the burden would become unbearable. Augmented by fatigue and the pressure of details often inconsequential, many doctors reach a phase where they no longer have the time nor capacity to think. The rosy prospectus of the glib detail man replaces more objective evaluation of these agents, and, in his zeal to be an up-to-date medico, the physician immediately adds them to his armamentarium.

"Be not the first by whom the new is tried

Nor yet the last to lay the old aside" is still a good aphorism to be pasted into the hatband.

Habituation plus ill-founded enthusiasm often leads to the adoption of routine "systems" of therapy which are made to apply whether or not they fit the individual, Benjamin Rush is remembered fondly as a great patriot and physician but who can calculate the number of trusting patients hurried through the pearly gates by his insistence on bleeding everyone in sight? Today there seems to be a definite policy in many quarters never to give a dose of medicine by mouth if it can possibly be given by needle. Is it any wonder that anaphylactic accidents are so prevalent?

But the doctor is not wholly at fault in these situations. What is he to do when a pet patient of many years standing arrives in his office armed with a clipping from the most recent popular magazine? I have often felt this pressure and watched a face grow longer and longer as I took twenty minutes to explain why I felt a dose of penicillin unwarranted, both of us fully aware that Dr. Zilch around the corner could and would give it in sixty seconds and collect his five dollars with similar alacrity. Why should the conscientious doctor so often be forced into such a defensive position? Some of my surgical confreres assure me that a similar pressure is exerted for abdominal and pelvic surgery by their volatile patients of Mediterranean extraction, the argument being "I have a pain-you operate and take it out."

If one aspires, as we all should, to do his patients no harm, how is this to be accomplished? It would first seem necessary to resolve anew each day not to be prematurely "pushed" into maneuvers by either intrinsic or extrinsic pressure. It is mandatory that the doctor keep posted not only on the indications for drugs but on the types and frequency of adverse reactions. He is then in a position to draw up a figurative balance sheet on which he can weigh the benefits to be attained against the risks involved. Few indeed are the occasions where impulsive decisions are necessary or preferable; a little time for reflection will often pay big dividends.

It helps to bear in mind that unlike auto accidents, which always happen to the other fellow, tragedies can happen, and with dramatic suddenness, to you. Pure science goes out the window when a patient succumbs in your office to a "shot" for which there was little or no need in the first place. It is difficult to view him as a statistic at the moment.

It would seem that in our unending search for the causes and clues of maladies, iatrogenic disease should be given its full measure of scrutiny.

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Regional Enteritis

This summarization attempts to cover the essential information on the subject, including therapy, and is designed as a time-saving refresher for the busy practitioner.

Regional enteritis is a nonspecific inflammation of the loops of the small intestine, involving mainly the distal segment, and characterized by the formation of an ulcerating, proliferating and cicatrizing granulomatous mass. Clinically, the disease presents the picture of a low-grade chronic infection of slowly progressive nature and ends by causing intestinal obstruction, or inanition and exhaustion.

Although isolated reports of the disease appeared in the literature before 1932,1 the first definite report was made by B. B. Crohn, L. Ginzburg and G. D. Oppenheimer in 1932.2 The disease was originally described as involving the terminal ileum, but now the disease concepts involve all of the small bowel, and occasionally parts of the stomach and colon. The true incidence of the disease is unknown but it is common enough to be considered as a diagnostic possibility in many cases of intestinal disorders.

Regional enteritis usually occurs in young persons between ages 20 and 30, but many cases occur in older persons. The disease is universal in its distribution and is thus not restricted to any geographic locality, race or nationality.

Etiology Various pathological conditions have been shown experimentally to produce granulomatous disease of the bowel. The primary etiologic factors in regional enteritis may be heterogeneous although the disease is a clinical and apparently pathological entity. No single cause has been described that can be considered responsible in all cases of regional enteritis. The etiological factors that have been considered include bacteria, impaired blood supply, impaired lymphatic supply and drainage, sarcoidosis, trauma, allergy, foreign bodies and psychosomatic difficulties.³

No single bacterial agent or virus can be held etiologically responsible for regional enteritis. Although some investigators have related acute and chronic enteritis to the common etiologic background of an antecedent attack of bacillary dysentery, there is no proof from any confirmatory series that all or even any significant number of cases are related to the dysentery bacillus.⁴

A pathological picture in the bowel of dogs that is similar to that of regional enteritis has been produced by the serial injections of crystalline silica or rosani-

line dve in the mesenteric and subserosal lymphatics, after an earlier intravenous injection of Escherichia coli.⁵ It has been postulated that the lymphatics of the small intestine can absorb material similar to the silica, such as cholesterol or tale, and thus produce edema, thickening and fibrosis of the bowel, mesentery and adjacent lymph nodes.6 These studies indicate a possible anatomical pathway over which various exciting factors may cause the enteritis but lymphatic obstruction is probably not an important factor in enteritis since the small bowel is rarely involved in acute mesenteric lymphadenitis and the lymph nodes in acute enteritis are rarely more than locally abnormal.5

A porcine enteritis has been described which is similar to human enteritis but there are vast histological differences such as the absence of giant cell systems and tubercles and there is probably no relationship between the two diseases. Statistically there is no evidence that external nonpenetrating trauma in humans can cause the disease. Experiments in dogs in which small intestines were subjected to direct trauma did not produce lesions resembling human enteritis.

The role of the emotions in the etiology of regional enteritis is as controversial as the role of psychosomatic difficulties in the etiology of ulcerative colitis. Dome observers have found no characteristic personality or greater incidence of neurosis in patients with regional enteritis than with other diseases while others have found that repetitious impact or stressful life situations on physiologic functions can eventually produce the pathology of regional enteritis and changes in the environment have been correlated clinically with exacerbations of the disease.

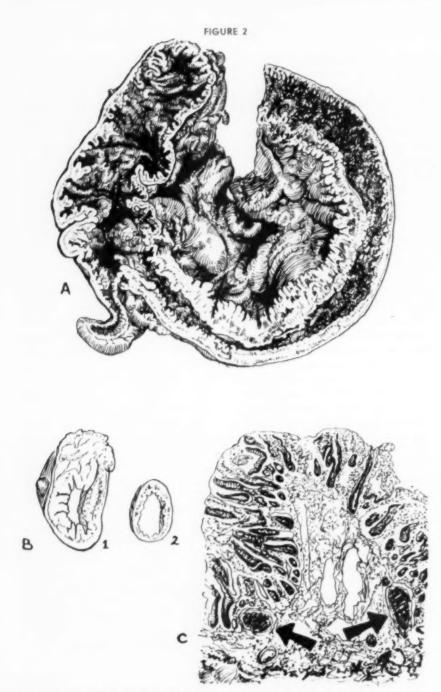
The psychosomatic factors, whether etiologically important or not, must be considered in the treatment of the patient. Sympathetic care and support of emotional needs are important adjuncts to therapy.

Pathology The granulomatous inflammation in the small bowel usually begins at the ileocecal valve and extends for 6-12 inches in an oral direction as a continuous cobblestone-like ulceration, accompanied by a dense thickening and infiltration of the submucosa, muscularis and serosa. There may be areas of uninvolved bowel, "skip-areas," separated by diseased bowel. Enlarged succulent mesenteric lymph nodes accompany the areas of bowel involvement. The affected area is thick, heavy and reddened. The lumen is narrowed, the intestine above becoming dilated. The mesentery is stiff and greatly thickened, and adhesion of the bowel to neighboring structures is followed by slow perforation and fistula formation.18

The disease is not limited to the terminal ileum and occasionally the whole ileum, or the ileum and the lower jejunum, or the upper ileum and the whole jejunum are involved. A rare form of



Fig. 1. Mucosal ulceration of terminal ileum from a dog sacrificed after 3 months of sand feeding.



A-Normal cecum and appendix. Thickening of B-Comparison of I, ileum with cicatrizing small intestine and mesentary with stenosis of lumen of terminal ileum.

enteritis with 2, normal ileum. C-Arrows point to granulomas in lamina propria at base of a villus.

the disease is an involvement of a localized few inches of the upper ileum or jejunum without involvement of the terminal ileum. The cecum and colon are rarely involved. Only exceptionally does the process pass the ileocecal valve. These cases are known as combined ileitis and colitis or as colo-ileitis.

Microscopically the primary lesions appear to be a lymphadenoid hyperplasia of the submucosa with the formation of noncaseating giant-cell systems. In the later stages ulceration may obscure and obliterate the primary lesion in the submucosa, but the giant cell systems may still be found in the regional lymph nodes. Some observers believe that there is no one single histological feature of the disease which is pathognomonic.14 The microscopic findings are not very uniquely different from that found in sarcoidosis, tuberculosis or in reactions to foreign bodies, but the microscopic findings together with the clinical picture point to a distinct diagnostic entity.

In the original description of the disease by Crohn and his associates the giant cells and groupings of large, pale cells found near them were considered foreign-body reactions to particles of vegetable matter caught within the ulcers. Some investigators have found specific pathological features in regional enteritis. The giant cell systems in the thickened submucosa and regional lymph nodes composed of epithelioid and giant cells are considered characteristic and even specific for regional enteritis by Hadfield.15 Some observers have found a specific pathological feature of proliferating endothelial cells within the lacteals immediately beneath the epithelium of the intestinal glands, as well as in the lymphatics, the

submucosa and subserosa. It is believed that the obliterative lymphangitis mechanically interrupts lymph flow and the noncaseating tubercle is formed by the surrounding eosinophils and lymphoid cells which conglomerate with giant cells. The regional nodes are similarly involved. The primary changes, by pressure on the arterial lumen, cause inflammation and fibrosis which then predominate and obscure the primary specific lesions. The primary features are not found in all cases because most specimens are from old chronic cases subjected to surgery.

Aberrant pyloric glands resembling the Brunner type of mucus-producing glands have been found scattered throughout the small intestine in many patients with regional enteritis and not in other conditions of the small bowel and recurrences have not occurred where the resected specimens contained no such glands.¹⁰

Symptoms Regional enteritis occurs commonly as a low-grade chronic granulomatous infection characterized by a prolonged history covering several months or years of diarrhea, abdominal pain, loss of weight, anemia, fistula formation and eventually symptoms of intestinal obstruction. The diarrhea contains mucus, pus and occasionally gross blood and may consist of three to five or more mushy or semisolid stools per day. The diarrheal movements are often accompanied by lower abdominal Upper abdominal symptoms, such as nausea and vomiting, are unusual.18

Examination often reveals a mass, usually in the right lower quadrant but sometimes in the midline above the bladder or even in the sigmoid area on the left. The mass is often tender and

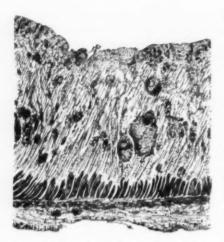


Fig. 3. Early lesion and ulceration of ileum showing lymphoid hyperplasia and obstructive lymphoedema of submucosa.

fixed. Partial intestinal obstruction of a subacute severity occurs in about 10% of patients, and is the end result of many years of ulceration and cicatrization and represents an attempt at healing and scar formation with narrowing of the lumen of the intestine, Occasionally obstruction may be the initial symptom especially in patients whose onset is acute and febrile and the pathologic changes in the small intestine are usually extensive, reaching high up into the upper ileum, and are based upon a diffuse, inflammatory, granulomatous change in the intestinal wall with considerable edema. The patient's general physical condition decreases slowly as the disease progresses from year to year. Loss of weight, anemia, leukocytosis, melena and vitamin deficiencies are found in chronic cases. The course of chronic regional enteritis is a slowly progressive one and spontaneous resolution rarely ensues. Slow perforation in the right lower quadrant of the abdomen with localized

peritonitis may occasionally end fatally. More usually, external fistulae or perirectal abscesses and fistulous tracts cause inanition and anemia.

Some patients have an acute episode of regional enteritis characterized by the sudden onset of severe cramps localized in the right lower quadrant, with fever ranging up to 101-102° F., leukocytosis and mild diarrhea. Examination of the abdomen reveals muscular rigidity, tenderness and rebound tenderness simulating acute appendicitis, Many patients are operated on with the mistaken diagnosis of acute appendicitis and the diseased, beefy red and injected ileum is found. Although some believe that most acute cases go on to develop chronic disease, spontaneous resolution does occur.19 About 25-50% subside without definite surgical treatment.20 Since there is a possibility of spontaneous resolution if the disease is limited to the terminal ileum, surgery should be limited to an exploration when necessary to establish a definite diagnosis since most cases of abdominal fistulae have followed an appendectomy in which the terminal ileum was acutely inflamed.21

Recently granulomatous involvement of the stomach and duodenum in acsociation with regional enteritis has been described with histological features similar to that seen in regional enteritis elsewhere. The symptoms include gastric retention with nausea, vomiting and epigastric distress aggravated by food, malabsorption, anemia and hypoproteinemia. Ulceration in the granulomatous area is common and fistula is rare. Ulcer and carcinoma of the pyloric and duodenal region must be excluded in the differential diagnosis. Because of the obstructive symptoms, conservative treatment is unsuccessful and the shortcircuiting procedures with gastroenterostomy are necessary provided the anastomosis is not made through granulomatous tissue.²²

The jejunum is commonly involved together with the ileum but a few isolated cases of primary involvement of the jejunum have been reported23 These cases must be differentiated from involvement of the jejunum after resection of the involved ileum. Due to the large amount of diseased bowel the constitutional reaction is very severe and malabsorption with its resultant retarded skeletel growth, macrocytic anemia, prothrombin deficiency and tetany. Because of the extensive disease resection is not possible and conservative therapy is necessary to maintain nutrition and combat infection.

Simultaneous granulomatous involvement of the ileum and colon is very rare. When ulcerative colitis causes an inflammation in the ileum, which occurs in about 20-40% of cases, mucosal ulceration with varying degrees of distension occur and there is no obstruction or fistula formation. Regional enteritis crosses the ileocecal barrier into the colon in less than 10% of cases and causes an ulcerative exudative process limited to the mucosa and submucosa rather than a granulomatous lesion.

Diagnosis The diagnosis of regional enteritis is based upon the findings of a tender fixed mass in the lower abdomen, the presence of external fistulous tracts or perirectal abscesses or fistulas, diarrhea, often intermittent, a low grade irregular fever and x-ray findings. Regional enteritis must be differentiated from sprue, primary ileocecal tuberculosis, diffuse Hodgkin's disease, disseminated lymphosarcoma of the small bowel and carcinoma of the ileum.



Fig. 4. Large number of Brunner type glands in mucosa of ileum,

X-rays are important in making an accurate diagnosis and can divide the patients into those with and without stenosis, which is important therapeutically. In the nonstenotic phase contrast x-rays show blunting and thickening of the mucosal folds which lose their regular appearance as they become partly fused.25 The lumen becomes variable in width and the mucosa granular, especially in the jejunum as the valvulae conniventes are destroyed. The bowel resembles a tubular cast due to complete disappearance of any mucousmembrane pattern. The stenotic phase is reached when the edematous thickening and spasm give way to fixed rigidity and fibrosed constriction. The lumen is markedly narrowed over varying lengths of bowel producing proximal dilation. The string sign is one of the oldest characteristic findings in regional enteritis, but is not pathognomonic of the disease. The string sign does not always represent a fixed, burnt-out process amenable to successful surgery. Inconstant spasm and irritability associated with ulceration may appear on xray as a string sign. Ulcerations, perforation and fistula formation are more frequent in the ileum than elsewhere while isolated involvement of the jejunum and duodenum is associated with prominence of the stenotic phase and infrequency of ulceration and fistula formation. Such findings lend themselves to successful treatment by sidetracking operations, since the paucity of ulceration lessens the chances of recurrence.

Complications The main complications are due to obstruction, perforation, abscess formation and fistulae. Anorectal and perirectal abscess and fistula occur in about 25% of cases.28 These infections are derived from the involved ileum by direct extension or, more commonly, by way of infected crypts of Morgagni and usually necessitate some form of surgery, often a diversionary ileostomy. Urological complications occur in 4-10% of cases and consist of enterovesical fistulae, retroperitoneal abscesses, and ureteral narrowing or actual obstruction, with hydroureter and hydronephrosis, primarily involving the right side.27 Some patients have unsuspected nodular enlargement of the pancreas without any apparent associated clinical significance.28

Treatment No really satisfactory medical or surgery treatment exists for regional enteritis. Because of the absence of a specific etiologic agent, medical management is empirical and symptomatic. Since spontaneous resolution is possible in some cases seen in the acute phase, any definitive surgery is contraindicated. The major therapeutic effort is directed towards the static or progressive forms of the disease with acute exacerbations. No therapy is curative and no regimen, medical or sur-



Fig. 5. X-ray showing narrowing of the lumen in the terminal ileum and destruction of the mucosal pattern.

gical, is so universally effective as to warrant its acceptance over others, except in the presence of certain complications. Medical therapy is indicated for acute enteritis, chronic enteritis without complications, diffuse ileojejunitis, and recurrent disease. Surgical therapy is reserved to effect palliation and control in the presence of obstruction, perforation with peritonitis, fistulas and a large, tender abdominal mass, and when conservative medical measures have failed to prevent invalidism. There is often poor correlation between the clinical status, x-ray findings and the pathological findings.

Conservative medical management is aimed at maintaining nutrition, allaying diarrhea, restoring blood loss, controlling infection and attending to the patient's emotional needs. The best diet is a high caloric, low-residue non-irritating diet from which specific elements are eliminated on the basis of intolerance.²⁹ Disturbance in absorption of

carbohydrates, proteins and fats are manifested by flatulence, edema and loss of fat-soluble vitamins, respectively, as well as secondary anorexia, weight loss, hypocalcemia, bleeding tendencies and tetany. Treatment of these complications may require the parenteral use of fat-soluble and water-soluble vitamins, transfusions of whole blood and albumin fractions and sufficient fat to make the diet palatable.

X-ray therapy has been tried with poor results. 20 Chemotherapy has been disappointing when applied in the acute febrile stage, except in relation to purulent complications. The antibiotics have the added danger of occasionally causing pseudomembranous enteritis. The non-absorbable sulfonamides are helpful for some complications and have been used over a long period of time with relative safety and effectiveness. Benefit has been obtained in the treatment of relapses associated with sepsis by the use of Sulfasixidine (Merck Sharp & Dohme).31 Dosage may be 30 grains (2 Gms.), administered every four hours for one or more weeks.

Steroids³² improve the patient's mood and appetite and consequently the nutrition but their inhibition of inflammation can lead to perforation and peritonitis. Steroids can cause a dramatic remission in fever, diarrhea and weight loss but for an unpredictable duration and without x-ray evidence of improvement. The steroids are not curative and must not be considered substitutes for other medical therapy.

Initially the dosage of Corticotropin (ACTH) is 20 mg, given intravenously every six hours (80 mg, per 24 hours) for a period of three or four days, after which the amount is gradually reduced until a maintenance level of 20 to 40 mg.

daily is established. If evidence of overdosage develops, the dosage schedule is decreased immediately. After a minimum of two weeks treatment with daily injections, the drug is administered in the amount of 20 to 40 mg, every other day. Eventually the dosage may be decreased to only 25 to 30 mg, every three to five days, if continued administration of Corticotropin seems warranted.

Recently Azulfidine (salicylazosulfapyridine — Pharmacia Laboratories) has been used for prolonged medication. The dosage employed is 1 to 1.5 Gm. every three to four hours for two or three weeks of each month, giving the patient several such courses of the medication. As improvement appears, the drug may be gradually discontinued over a period of time.

Recently several investigators^{34, 35} have reported on the experimental use of Meticorten and Meticortelone (Schering). In two patients with regional enteritis Meticorten produced the desired clinical improvement and elicited a satisfactory anti-inflammatory response. However, no significant changes in the small intestine were revealed by repeat roentgenograms.

Although the full potential usefulness of prednisone and prednisolone in these disorders is still under investigation, it is clear that the metisteroids, here as elsewhere, have the advantage over the older corticosteroids of lessening the need of strict diet supervision to avoid electrolyte disturbances,

Maintenance dosage currently recommended for the metisteroids in regional enteritis is 5 mg, taken four to six times daily. When surgery is necessary, increased amounts of steroid pre- and postoperatively may be indicated.

It is inadvisable to use opiates for the

diarrhea except in extremis.81 Careful attention to diet, the administration of tincture of belladonna in physiologic doses and the periodic use of a preparation containing bismuth and kaolin usually suffice. A maintenance dose of iron, preferably in the form of an elixir of ferrous sulfate, is often required in order to maintain the blood count at a normal level. If the absorptive surface of the bowel has been markedly reduced and it is not possible to maintain a normal nutritional balance by orally administered vitamins, periodic courses of parenteral vitamin B preparations, or, preferably liver extract may be employed.

When regional enteritis was first described, surgical resection of the involved bowel was considered the best treatment. With the recognition of the morbidity, mortality and high recurrence rate, the earlier enthusiasm waned. The operative mortality has been as high as 14% 36 and the recurrence rate as high as 67%, 37 after resection. The diagnosis of regional enteritis does not immediately or even inevitably lead to surgery, and even radical resection, removing all the obviously involved bowel and lymph nodes, may not be curative.35 The various surgical procedures used began with the excision of the grossly abnormal segment of bowel and evolved to the accomplishment of essentially the same resection as a two-stage operation, after a preliminary sidetracking ileocolostomy, and culminated in the use of the defunctioning ileocolostomy. Each type of surgical treatment has its individual enthusiasts. The excision of diseased bowel is based on the sound principle of removal of all obvious pathology but others point to an increased surgical mortality and high recurrence rate. The lower morbidity and mortality with the use of ileocolostomy operation has strengthened the faith of its advocates. The mortality with ileocolostomy has been from³⁶ 0-4.5% ³⁹ and the recurrence rate has ranged from³⁶ 22.8% to 57%.³⁷ Many references in the literature are based on poor follow-up and inadequate study of patients so that comparison of surgical results is difficult.

It is important to differentiate the stenotic and nonstenotic phase by x-ray. Recurrent enteritis is less common if exclusion or resection is undertaken when the disease has reached the healing stage, with obstruction due to thickening and constriction, rather than at a time when ulceration and fistula formation are indications of continued activity. The linear extent of the bowel involvement seldom changes after the patient appears for the first x-ray studies. Qualitative changes within this relatively fixed length are usually reflected in the complications of stenosis and fistula. The major exception to the quantitative aspect of this progression is the frequent recurrence observed, usually within the first year, after surgery. Some patients may have no symptoms or physical findings of regional enteritis after surgery and yet x-ray will show some current disease.

Surgery must be relegated to the role of a palliative rather than a curative measure.²¹ One of the difficulties of the surgical approach is the inability to determine the absence or presence of disease of the mucosa and submucosa when seen from the serosal surface. Intermittent or skip areas may be present and left behind. The disease has a multicentric or diffuse origin and therefore recurrences are bound to occur after

resection. Once the disease has recurred, further surgical therapy leads to an ever increasing frequency of recurrence and nutritional deficiencies occur. The diseased bowel is unable to absorb normally and often not enough good bowel is left after surgery for adequate nutrition.

Prognosis There is a difference of opinion in the literature as to the relative prognosis of regional enteritis. Crohn⁴⁰ believes that the prognosis is good as to life, particularly in those patients in whom the process is limited to the terminal ileum and in whom resections or short-circuiting operations can be performed.

In complicated cases with fistulae the prognosis, while still good, is altered by the complexity of the pathologic process. The outlook under conservative medical care is comparatively good, both as to life and as to healing of the inflammatory process.

Others believe that the prognosis as to life is only fair, especially in complicated cases with recurrences and that constant and expert medical care is necessary.

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at "Coroner's Corner" Page 33a

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MEDICAL TIMES

The Diagnosis of Lung Cancer

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Omaha, Nebraska

Previously, we' have pointed out that current textbooks have remained far behind the times in their portrayal of the symptom complex of cancer. By and large, the symptoms of late or inoperable cancer are incompletely erased from our teaching and thinking.

Gastric carcinoma can be readily diagnosed by a history of dyspepsia, weight loss, anemia, and an upper abdominal mass, but to what avail? Similarly the diagnosis of pulmonary carcinoma by cough, chest pain and weight loss requires little skill or perseverance. The treatment requires less of these faculties since there probably would be none, the lesion being untreatable.

From the insidious onset of bronchogenic carcinoma to the syndrome expressed above is a time lapse of months, perhaps eighteen to twenty-four, perhaps more. To effect treatment in this "golden period" requires a concern on the part of the patient and on the part of the physician consulted.

The laity is being cautioned by many media of communication to heed certain early symptoms of cancer; whatever delay may be laid upon the patient's doorstep is not within the scope of this discussion. There is no intent, however, to minimize the importance of this source of delay.

The delay in diagnosis on the physician's part is very much our present concern. Delay may be avoided by aggressiveness and the firm conviction that every chest shadow requires positive identification as to its benignity or malignity. Aggressiveness and conviction may be sorely tried by the small asymptomatic lesion appearing unexpectedly on the routine or survey type chest film.

Unfortunately the chest x-ray does not make a cytological diagnosis. It shows and relates but one thing—a shadow—or more specifically a difference in tissue density. How many times have we seen a report of a chest film diagnosing tuberculosis, tuberculoma or cancer. To be sure an apical cavitation may be tuberculosis, a "coin" lesion may be a tuberculoma, or a parahilar mass with peripheral atelectasis may be cancer, but again they may all be cancer or none may be.

We have many aids which may or may not achieve our diagnosis. These include positional x-rays, planography,

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exfoliative cytology of the sputum, bronchography, bronchoscopy, and scalene node biopsy. Included in the diagnostic armamentarium is exploratory thoracotomy.

In the best of hands a positive diagnosis of cancer may be achieved in but 65 to 75 per cent of cases, utilizing all of the above with the exception of exploratory thoracotomy. With the latter, accurate diagnosis should approach 100 per cent.

The ideal case of pulmonary carcinoma, relative to cure, is the asymptomatic one. Let us imagine a fifty-yearold male patient with a coin lesion of the right mid lung field revealed by a survey film. What is it and what is to be recommended? The patient does not smoke, nor has he cough or recurrent pulmonary infection. A systemic review is unrewarding.

Immediately we are burdened to consider the following usual possibilities; tuberculoma, histoplasmosis, coccidio-idomycosis, hamartoma, metastatic carcinoma, or a primary bronchogenic carcinoma. The lesion on planography shows no lamination, cavitation or calcium. The presence of calcium would suggest, but by no means assure, benignity.

Skin testing is negative to the histoplasmin and coccidioidin antigens; second strength tuberculin is positive.

No sputum is produced and bronchoscopy is done. The corina is sharp and no lesion can be seen; there is no evidence of bronchial compression. Cytological examination of a saline aspirate reveals no tumor type cells and there are no acid test bacilli on direct smear.

Examination of the peripheral blood reveals a normal pattern; the urinalysis and blood urea nitrogen are normal.

Quo vodamus? Is the lesion possibly metastatic? The systemic review has pinpointed nothing. Perhaps a complete gastrointestinal survey and intravenous pyelography would be ideal but in our experience in similar situations these studies are both unrewarding and expensive. In other instances probably they should be done.

We have spoken both of aggressiveness and of conviction; now we need courage for we are about to suggest to an asymptomatic patient who feels quite well that he requires major surgery. Our courage is buttressed by the appreciation of an opportunity to cure early cancer. We are aware that the mortality of an exploratory thoracotomy is the same as that of an exploratory laparotomy, a procedure we have recommended with less hesitation many times. We know that pneumonectomy carries a mortality of 5 per cent or less, approximately that of gastric resection. We know that if carcinoma is found, we have given our patient his one chance for cure and have practiced sound medicine.

We have hypothecated upon an asymptomatic case. All of us are aware that cough or alteration of a pre-existing cough are early symptoms of cancer. Recurrent pulmonary infection should put the physician on his guard. As time and carcinoma progress, we are responsible both to diagnose and to assess operability. A pleural effusion should be aspirated for cytological examination and possible diagnosis. The presence of tumor cells is diagnostic and evidence that surgery is not indicated, palliation being resorted to with other modalities of treatment. A bloody pleural effusion forebodes pleural involvement but is not a categorical contraindication to thoracotomy if tumor cells are absent.

A scalene node biopsy positive for tumor militates against further surgery. There is but little satisfaction in making a diagnosis of an inoperable lesion but there is satisfaction in avoiding major exploratory surgery when possible.

Bronchogenic carcinoma is now the principal malignant neoplasm in the white adult male. When discovered early, cure is possible. An intelligent patient and a physician, who is alert to the earliest symptoms of cancer and who will carry all pulmonary lesions to diagnosis, should combine to provide the optimum opportunity for cure of cancer.

It is the grave responsibility of the physician to have in his hands the histological diagnosis if he tells the patient the shadow on his chest film is nothing to worry about.

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Pediatric Medical and Surgical Considerations

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Few men can practice medicine today without coming in contact with children and their diseases. Pediatric surgical specialists are ideal, but alas, we cannot turn each and every case over to them and they in turn are probably happy that we are unable to do so.

Infancy and childhood affect many changes. Residual anomalies, epiphyseal persistence, defects and habits, which for the most part do not persist after puberty. All must be taken into consideration and discounts afforded. Diagnosis is more difficult than in the adult because symptoms are not easily described subjectively. The child is harder to examine because of fears and frustrations and in some cases parental interference. The younger the child the more difficulty is experienced in an adequate examination. We must therefore rely on the parent's narration of the illness almost entirely. Febrile conditions should be taken with a grain of salt. An infant or a child will elevate its temperature with the slightest provocation. Blood counts are significant but only as an adjunct. We have noted that in our routine counts on children, anemia is a

very common finding and we are trying to improve it in our area, realizing that this anemia and hypoxia go hand in hand, which if chronic, irreparable results to vital organs may manifest themselves as clearly shown in World War II's malnutritions and secondary anemias in the civilian population. White blood counts and differentials are very sensitive from the poly side and it takes little infection to get a huge response. X-rays are helpful but usually if of the abdomen, loops of small and large bowel are indistinguishable unless barium is infused rectally. Spasm of the recti and tenderness of the abdomen are often spurious and voluntary. We use barbiturates rectally when diagnosis is difficult to offset this. Rebound tenderness too, is not a good criterion in the child. They may whimper and cry with the slightest aberration from the routine. Neonatal life obscures objective signs of tenderness and spasm so commonly noted in the adult. The new born, however, does have some reaction to pain and it has often been said that it is more

painful to be born than to die.

The urine is often a help but the presence of pus does not rule out appendicitis, even in the female where we might expect a unilateral pyelitis from the clinical signs and symptoms. Masses may be fecal in origin and must be discounted in many instances. Chest symptoms too are often referred to the abdomen and even exanthemata can often be distinguished by the pathological report only. Parasitic infections too, should not be discounted in the child. Trichinosis, pinworms and roundworms as intestinal parasites are of a very frequent occurrence. Yeast and even lesser infections are frequently the cause of childhood discomfort in regions extending from the eyes to the genitals. Trichomonas and foreign bodies are often the answer to genital irritations in both male and female children. We well recall a glass tubing inserted and lost in the urethra of a male child which required much maneuvering to extract without damage.

In consideration of anomalies most of us have had Meckel's which gave obstructive symptoms and left sided appendicitis or unrotated bowel. Hernias of all types and descriptions have been observed, but there are two in children which have imprinted our memories. First, is a child with right lower quadrant pain, tenderness and spasm, low grade fever and elevated count. At operation no cecum was located. X-ray later revealed that the cecum was in the region of the pericardium. Luckily this was extracted with ease from the abdominal side and the diaphragmatic rent was closed. It is strange but for the most part true, that diaphragmatic hernia in children usually can be reduced from below because of little or

no adhesions which form. The adult acquires adhesions as most of us know and hence they are usually approached, by most men, transthoracically. The second hernia which stands out in our experience was a sliding hernia in a child which was almost impossible to diagnose previous to operation. Careful location of the sac was performed and the hernia was treated in the usual manner for this type of lesion.

In regard to intussusception, it has been our experience, in two cases diagnosed and rightly so, as mesenteric adenitis, only to have this form. Intussusception occurred in these children much the same as in the adult. Usually both are due to tumor formation but in the child, a large inflammatory gland precipitated the teloscopy and is believed to be, for the most part, the cause of most infantile intussusception. Current jelly or brick red stools are a late symptom of intussusception and the typical sausage shaped mass is not always felt. We have found several cases, on exploratory, without these signs. However, bright red blood in the stool is always highly suggestive of this or a Meckel's. In one instance we found both, bringing forth the fact that an exploration is always a good idea. Cases with rotten bowel in the presence of a marked peritonitis with resection have proved fatal in our hands. Those drained widely have not made the grade either. Gangrenous bowel loops brought out and resected at a later date have recovered.

Peristalsis can often be seen in an infant with pyloric stenosis. This is usually from the left to the right. The child vomits no bile because of the anatomical position of the common duct's drainage area. A tumor or mass is almost always palpable in these protracted cases. The child usually is of the male sex and that of a primipara. Many men operate through the flank on these children but we have found that a right paramedium incision usually suffices, especially if retention sutures are placed to prevent evisceration and almost always the approach to the superior anterior surface is ample. The occasional deep seated tumor cannot be reached with the flank or lateral incision.

When the need for circumcision occurs, and we believe it is necessary in every male infant, the surgical technique seems to us preferable to the machine type of procedure. We have used both and the percentage of incomplete procedures is much higher with the mechanical than with the surgical maneuver in our summary of cases.

Tonsillectomy used to be more or less a routine operation. Today we do not submit our children to this needless procedure unless pathology definitely presents itself. There is certainly nothing minor about a tonsillectomy and lasting residuals seem to occur even when performed by the most expert hands, in some instances.

Atresia of the esophagus has been experienced by most of us. We have noted that Lipiodol is much better than barium for exploration by x-ray, much the same as we found out the hard way that these kids drown in their own fluid after a gastrostomy is performed unless an esophageal fistula also is instituted, to allow the salivary products to escape or be re-routed for digestive purposes.

Appendicitis should not be disregarded in the infant. We have heard many men claim they have never seen a case in the first six months of life. Fortunately or unfortunately it has been our experience to have seen four cases in this era of life. Two were considered pneumonitis previous to operation.

Before passing on this subject it might be well to call attention to the removal of the appendix in a child. It is not sufficient to clamp the mesentery and the base of the appendix together in one single tie as this will often cause obstructive symptoms and in some cases fatalities. It is more prudent to resect the mesentery and tie it separately from the base. It should also be noted that the fat pad is in place and that the ileum is clear and free before the abdomen is closed. It has been the dilemma of most men who do much surgery to have this happen, especially in their early years of experience, ourselves not excluded.

Empyema too, still exists and should always be suspected with the usual signs and symptoms — often referred to the abdomen. Antibiotics have not caused its complete disappearance.

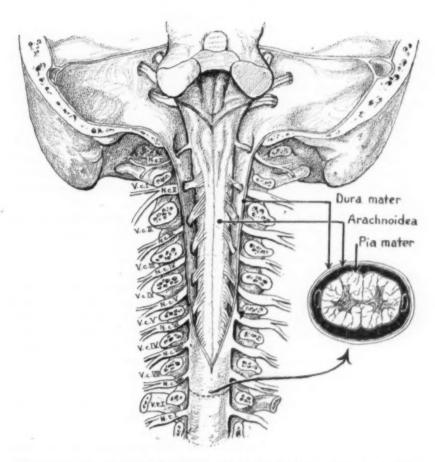
New strains or resistant types of bacteria are becoming more and more prevalent and markedly increased in virulence. Enteritis is a very common disease today due to our broad spectrum antibiotic sensitivities. It is shameful that we use or have used these really wondrous drugs so promiscuously. Most of us have followed each supposedly clean operation with some form of an antibiotic. In many cases we have helped build up a sensitivity to this medication.

A complete review of all pediatric cases treated by the general surgeon would be both tiresome and unfruitful. It has been the prime purpose of this paper to call attention to a few of the thorns in our crowns—the stars will shine for themselves.

ourselves or our colleagues we are all subject to pitfalls and aberrations. We

Regardless of how good we consider learn from our elders, whom we should revere, and we profit by the mistakes, misfortunes and experiences of others.

Clini-Clipping



Anatomical diagram of cervical spine showing relation of cervical nerves to cervical vertebrae, meninges and cord.

The Treatment of Mental Illness

Maintenance Doses of Chlorpromazine

BENJAMIN POLLACK, M.D. Rochester, New York

There is little disagreement as to the value of maintenance doses of chlorpromazine (Thorazine) in the treatment of chronic and acute psychoses and psychoneurosis.

The writer has previously 1-0 indicated the value of the continuation of such treatments after the acute stage has subsided. The lengths of the treatment, the duration and the indications are still fields of controversy. Based upon treatment with Thorazine on over 3800 patients in the past three years, the following conclusions have been evolved and may serve in part to clarify this problem.

Psychopharmacotherapy should be regarded as only one of many other forms of psychotherapeutic treatments which are being given simultaneously. With this in mind, it must be remembered that maintenance dose of Thorazine should not be regarded as a static quantity but rather as a flexible dosage which can be changed according to the condition of the patient and the variations in environmental or endogenous stresses. Maintenance doses are given for four purposes: (1) to control or

modify the emotional, psychic and behavioral disturbances in a person still mentally ill but improved, (2) to prevent relapses in an apparently recovered person and (3) to modify or change the personality reaction of the individual to the realistic demands of everyday life. (4) to improve receptivity of the patient and aid in continued psychotherapy.

All Thorazine treated patients who have shown a good response to treatment and who had a psychosis of a purely "functional" nature should be placed upon maintenance dosage of Thorazine, not only to control the acute symptoms but to modify and change the precipitating conflicts which may have caused the psychosis or the acute psychoneurosis. Such mental illness is frequently the result of a conflict at conscious or unconscious levels and may be associated with long standing personality defects which have been present undoubtedly since childhood. the case of organic psychosis, the duration of treatment should be based upon symptomatic needs.

With this in mind, maintenance dos-

ages of Thorazine are indicated not only for the control of the acute illness but to produce a lessened sensitivity of the individual to the realistic demands of everyday life. It must be remembered that in many such individuals the intensity of reaction is greater than nor-Maintenance dosages in such individuals, taken over a long period of time, may and probably can produce an altered conditioned response and change in the habitual reaction of the individual to stress. In order to produce this, it is, therefore, necessary to give such medication for a long period of time. If possible, this should be done for a year or longer, particularly in the more chronic illness or the obvious defective personality. In certain patients, it may require maintenance medication for years or even life. This is a decision which must be made upon the basis of an anamnesis embodying the essential developmental features, usual reactions of that individual, and history of previous attacks.

Maintenance dosage should also vary according to the previous response to such treatments and at periods of additional stresses, whether endogenous or exogenous as determined by the psychiatrist at therapeutic sessions, Indications for maintenance dosage based only upon acute and chronic mental illness are not valid. All such individuals should be placed on maintenance dosage for an indefinite period and not only for the duration of the acute symptoms. The decision to discontinue the medication should be made on the basis of the history and effects of treatment. This concept is based upon a study of patients released from the hospital and also on out-patients,

At the Rochester State Hospital, an

average of five hundred patients who have been released from the hospital are constantly being maintained on maintenance dosages of Thorazine, These include young and old, acute and chronic. We have learned that premature cessation of the medication because the patient feels well may cause many relapses or need for return to the hospital. It is good insurance in some patients to continue medication and to follow this schedule indefinitely.

Our early and continued research confirms the marked reduction to one-third to one-fifth of the usual relapse rate when in-patients or out-patients are treated with medication compared to those in whom medication is discontinued at the time they leave the hospital or shortly thereafter. Our experience with Thorazine now comprises over 3800 treated patients. This would indicate that given the medication only on a symptomatic basis produces very inferior results as compared to a regularly continued maintenance dosage. This is also true in the case of psychoneurotics who have not been treated in the hospital but in the office and who have responded well to medication. It must also be remembered that there may be an intensification of stress from time to time which may require temporarily at least an increase in dosage if deemed necessary by the patient's psychiatrist.

It is necessary for some patients to take medication indefinitely. All such dosages, with very few exceptions, are given at bedtime so that there is no interference with the ordinary everyday routine of the individual. Maintenance dosages are given at bedtime once daily except where it is necessary to give very large dosages, Maintenance dosages vary considerably with each patient and should be determined on an individual basis for each patient because this is not directly proportional to the intensity of the symptoms, either in the emotional, psychotic, or behavioral fields.

Some patients do well on as low as 50 mgms, a day whereas others require 800 mgms, or more per day. The majority of patients do well after the acute phase on a maintenance dose of between 100 and 400 mgms, given once a day at bedtime. There should be no hesitation in giving as high as 600-800 mgms, to a patient with the dosage being divided into two dosages in the evening. With this type of therapy, patients have little drowsiness the next day. Their reflexes are good and they have few if any side effects which are annoying.

Many patients lose the side effects after they have been taking Thorazine for some time and certainly the majority of them do not have them eight hours after the last dosage. If there is any tendency to drowsiness the following morning on the larger dosage, then dexedrine may be given once or twice a day in 5 or 10 mgm. dosages. There are many patients on this type of

schedule who will continue to do their work without difficulty and who suffer none or few inconveniences.

With an average number of at least 500 extramural patients receiving Thorazine, there has been surprisingly few side effects. This undoubtedly is due to the fact that most of the patients have previously received treatment in the hospital. Our experience is that if side affects are to occur, they do so within the first six to eight weeks of treatment. Less side affects are present when the drug is taken regularly instead of sporadically.

If this type of regime can be carried out, much can be accomplished. It is, however, difficult to have patients continue to take medication when the, feel well unless the patient and the family are properly oriented. This is an important function that the psychiatrist and social worker should perform. If carried out in this way, it can produce a much lessened rate of recurrence of symptoms and be a source thus of less difficulty to the family and the patient, particularly when drug therapy is associated with psychotherapy, manipulation of environmental stresses, reeducation, guidance, and support of the patient and the family.

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Treatment of Arthritis

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Arthritis is a universal problem afflicting millions of people throughout the world leaving untold sufferings and crippling in its wake. With the modern age of stress and strain overladen with emotional burden humanity is exposed more and more to this chronic incurable disease and still keeps on grasping at every straw for symptomatic relief. The psychological trauma of fear for the future disabilities exposes these human beings to a fertile soil wherein the seeds of the disease can grow extensively,

In the United States alone there are over eight millions of people with rheumatoid arthritis and the incidence of osteoarthritis is much greater especially since the span of life has been lengthened to almost seventy years of age. With our growing population of the aged, chronic diseases such as arthritis will create a vast problem.

The intelligent management interwoven with a definite farsighted goal will lessen the sufferings of those who are condemned to hopeless existence in bed or in a wheelchair. The sincere assurance of the patients with osteoarthritis that they do not have a crippling disease adds peace to the turbulent mind

and the personal interest with self-dedication of the physicians and technicians without the promise of magic formulae will gain the utmost cooperation of the rheumatoid arthritics. With the advent of the corticotropics, cortisone and other drugs much relief can be offered to the patients but the primary objectives should be kept uppermost in the mind, namely, the retaining of the normal or nearly normal skeletalmuscular balance with good range of motions so that the patient can maintain his self independence in managing his daily needs both the personal and the economic. The use of hormones not to be relied upon as the sole agents but management must be individualized and other agents such as rest, physical therapy, psychotherapy, occupational therapy, good nursing dynamics with good range of motions in order that he can

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maintain his self independence in managing his daily needs both in the personal and economic field. The use of hormones should not be relied upon as a panacea but other physical agents such as physical therapy together with psychotherapy, occupational therapy, good nursing, social service and orthopedics should be mobilized as a team to combat the invading host.

The impact of physical ailment is tremendous on the patients' nervous system therefore the mental aspect is just as important as the physical aspect in achieving success. A busy mind and a well occupied body will never nurture the growth of despair and frustrations.

While confined to bed, the patient still can exercise some of the uninvolved joints in order to aid the cardio-vascular dynamics. As Dr. Steinhaus (i) maintains that the phasic contractions of the muscles hasten the blood flow from the arteries to the veins and send it back in large amount to the heart. If a patient flexes his wrist twice in one second, the cardiac output is increased from 3.6 L, per minute to 5.2 L. and if he flexes his right thigh only once per second then the output is increased to 7.7. L.

Occupational therapy in the form of leather work, sewing, knitting and volved parts but it will glorify the ego in being a creator of some useful object painting will not only exercise the ineither for himself or for his beloved ones. The joy of receiving his nightly visitors is accentuated by the pride of creative accomplishments.

Acute inflamed joints may respond more readily to cold than to heat application. In the acute stage with great amount of muscle spasm and pain, the application of splints in the form of

plastics or plaster of paris will afford relief. The circular cast on the lower extremity may be bivalved and use the posterior shell for the extremity during the night in the subacute stage in order to rest the parts and maintain the knee in extension. The cast for the upper extremity can be put on in numerous layers maintaining the wrist in dorsiflexion, the fingers in about 20 degrees flexion and the elbow in about 80 degrees flexion. The entire arm is placed in slight abduction and a pillow is placed in the axillary space. If possible the lower extremity should be placed in full extension either through manipulation or traction and the foot should rest against a foot board in order to prevent plantar flexion. Even though the extremity is encased in a cast, static contractions of the muscles will help to maintain tonus and aid circulation. In the subacute and chronic cases heat is followed by gentle massage and rhythmic, passive, active or active assistive exercises. During the ambulatory phase the patient should have good shoes, arch supports if necessary and walk with good posture and sit in good posture. For aiding ambulation crutches are preferred to cane because the postural alignment is much better. Posture is of great importance especially in the rheumatoid spondylitis. It should be kept in mind constantly, especially when a young patient presents himself with constant complaints of low back ache and X-Ray findings reveal bilateral sacral iliac involvements, then is the time to institute postural corrections and exercises because in later life if spondylitis does develop the difference in the vertebral fusions in the erect or flexed position may change the entire life of the patient.

I am a firm believer in proper exercises when indicated but the best motivation for the arthritic patients is to do something for themselves through their own volition. I have seen some beautiful pottery, needle and weaving works from the deformed arthritic fingers and wrists.

Osteoarthritis presents a different problem both for the doctor and the patients. Although there is no etiological cause known yet first we know that stress and strain, occupation and emotional factors play a great part in the disease.

The most important dictum to the patient who is suffering with osteoarthritis is that "you will not be crippled" and this should be imprinted on his mind at the very first visit. The word arthritis always connotes the word, crippling in the patient's mind therefore if that stigma is removed then half of the battle is won. The disease usually occurs after the fourth decade of life and being most prevalent in obese individuals whose occupations will influence their postures such as bookkeepers, stenographers, dentists, truck drivers and barbers. The weight bearing joints such as the knees and ankles, the cervical, dorsal and lumbar vertebrae are commonly involved. The discomfort is usually due to muscle spasm which is aggravated by the stress and strain of daily life together with poor postural habit, emotional upsets, faulty weight bearing and incorrect lifting of objects. To dismiss a patient with the remark that everybody has a certain amount of osteoarthritis is not only bad medicine but poor psychology.

The examination includes a complete evaluation of physical, postural and emotional status of the patient, his occupation, shoes, feet and x-ray studies. After examination the patient is assured that it is a degenerative process but it will not be crippling.

In cervical arthritis the treatments consist of heat either in the form of packs or in the form of dry heat such as infra red. Heat is followed by gentle head tilting exercises and massage. Traction is given in the form of the Sayre traction commencing with 15 lbs. of weight and gradually increase it to 40 lbs. The patient is instructed in correct neck posture and advised to use a small pillow under the neck during sleeping hours.

In osteoarthritis of the dorsal and lumbar spine the treatment commences with heat which may be short wave with the cables, multiple luminous heat as the baker or moist chemical packs which retain heat for one-half hour. Heat is followed by shoulder shrugging exercises and shoulder flexion and extension for the dorsal spine and flexion exercises for the lumbar spine. The feet are carefully inspected for arch deviations and pronation so that appropriate shoes may be prescribed. In low backaches it is always advisable to measure the length of the lower extremities.

Osteoarthritis of the hands, elbows and feet is usually treated with whirlpool bath at 100 degrees F. followed by massage and exercises. The knee is supported with elastic bandages extending from the toes to above the knee joints.

Since 1951 I have been using a new modality for arthritis especially the osteoarthritic type, ultrasonic energy. In 1953 in the Alabama State Journal I reported thirty-nine cases treated with ultrasonic energy with about 36% of relief. (2) Ultrasonic energy is given over the area of pain for three minutes and over the radicular distribution for two minutes at the maximum wattage of two watts per sq. cm., the area being anointed with mineral oil which acts as a coupling agent. The sounding head which contains the vibrating quartz is moved slowly over the area to be treated. In treating uneven surfaces such as fingers, hands or feet the parts are submerged in water and the sounding head is kept about 2 cms, above the parts to be treated moving it slowly back and forth. Treatments are given daily for about two weeks but even longer period of treatments were without complications. The action of ultrasonic energy in my conception is biophysical, micromassage and chemical changes. The small amount of heat it generates does not warrant the conception that its effect is thermal.

Physical therapy does benefit the patients in arthritic conditions but it is only a part of the team of medicine, (3). If it is given properly and prescribed in written form for the patient and he is advised of the urgent necessity of home treatments and care then it will prove to be a valuable adjunct in the management of arthritis.

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SAFETY IN SUBCERY lies in the meticulous approach and not in the hasty section of blindly clamped tissue masses. Dispatch is commendable, but never at the cost of thoroughness. As anesthesia and blood become safer to administer and the electrolytic-nutritive balance simpler to maintain, the once necessary haste "to get the patient off the operation table" loses its significance. Thoroughness entails careful dissection without which clear visualization of structures cannot be obtained. Thoroughness not speed, becomes the criterion for good surgery, and the meticulousness with which a procedure is performed the only gauge for technical excellence.

-From Surgical Technicrams by F. M. Al Akl, M.D.

Immunization Against Poliomyelitis

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The labors of Salk and all the men who contributed to the basic knowledge which allowed for the development of an effective vaccine against poliomyelitis have been well awarded by the experience of the past summer of 1956. While the essential purpose of this article is to review the recent literature concerning immunization against poliomyelitis, I think the dramatic effect of the vaccine might be pointed out by our local experience of our poliomyelitis service at the Cincinnati General Hospital during the year 1954, 1955, and 1956. Preceding the 1954 season no vaccine was available locally. Preceding the 1955 season some 30,000 school children received one injection and, of course, preceding the 1956 season hundreads of thousands of individuals were immunized in this locality. Table I presents the statistics showing the tremendous drop in incidence over this three year period. It is, indeed, quite an interesting experience to walk through the three closed, empty wards of our poliomyelitis division and to see on the one open ward just one or two cases of polio.

Of course, there have been much more thorough studies undertaken in the past several years to evaluate the vaccine and it will be worthwhile to present some of this information which has been recently published.

An excellent review of the status of the Salk vaccine and its effectiveness is presented in the brochure mailed all physicians by the National Foundation For Infantile Paralysis in June 1956.1 Table II graphically demonstrates the effectiveness of the vaccine in protecting vaccinated children against paralytic poliomyelitis. This chart includes statistics from eleven states and includes children with one or more injections of the vaccine. The bulk of the children inoculated are in the seven and eightyear-old groups, and the paralytic admission rate for poliomyelitis for 1955 dropped fifty-six per cent from the 1954 level in the eight-year-old group and fifty-one per cent in the seven-year-old group. This contrasts with the decline

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of only twenty-three per cent for the total population.

Extremely important evidence of the effectiveness of the Salk vaccine came from experience in the 1955 Massachusetts epidemic. Over 3,900 cases of poliomyelitis were reported in this state alone. In preventing paralytic cases in this area one or more inoculations were sixty-two per cent effective, practically the same as that observed by Francis for protection against Type I infections during the 1954 Field Trials. Again, the majority of these children had received only one injection of the vaccine. There is considerable evidence, although statistics are not reliable because of relatively small numbers, that the effectiveness increases greatly with two injections and particularly with the full course of three properly spaced injections; that is, the first two injections a month apart and the third, or booster dose, seven months after the second injection. Table III3 graphically presents this information. While figures are not available for the summer and fall of 1956, preliminary reports indicate a probable fifty per cent decrease in total

incidence of poliomyelitis and a marked degree of protection in those receiving a complete course of immunization. The following is a list of contra-indications for administering the Salk vaccine as listed by the N.F.I.P.

- The vaccine should not be given during a major acute illness.
- The vaccine should not be given during the summer ("polio season") or during epidemics of poliomyelitis to persons who are exhibiting symptoms of minor illness, especially fever, sore throat or gastrointestinal upset.
- 3. The vaccine should not be given to persons in a household where a case of poliomyelitis has just occurred. The chances are that by the time the index is diagnosed, almost all other members of the household will already be infected with polio virus. Thus the vaccine will do absolutely no good at this time, and there is the minimal risk that the process of injection will do harm in persons in whom it may be presumed that the virus is already multiplying.

Table 1

Non-	paralytic	
Para	lytic	

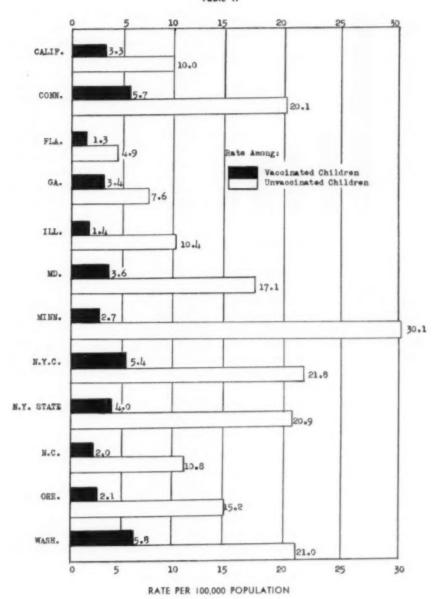
Res	pira	tor	C	8505

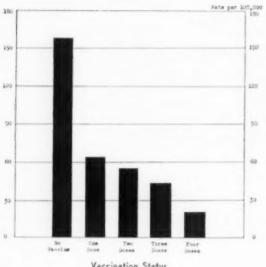
Trachectomies

Deaths

1954	1955	1956	
52	12	20	
133	86	14	
36	30	2	
19	13	0	
6	4	0	

Table II





Vaccination Status

On the basis of present evidence there is no contra-indication to the widespread administration of Salk vaccine in a period of rising incidence of polio, both paralytic and nonparalytic. The evidence accumulated in 1955 of the effectiveness of even one injection of the Salk vaccine would suggest that immediate vaccination of the entire unvaccinated population, at least up to the age of 35 or 40, would offer the best hope of aborting the epidemic. This certainly seemed to be the experience in the epidemic which occurred in Chicago during the 1956 season, although complete analysis of this epidemic is not available. Certainly there was a high degree of protection among those individuals who were immunized prior to the epidemic, and the fact that the epidemic was broken before the predicted time suggests the effectiveness of the vaccine given during a rising incidence of polio.

The confusion of governmental regulations and distribution of the vaccine is finally at an end since the problem of supply and demand has been finally conquered. At the present time, and certainly in the future, there is abundance of vaccine available for the use of all age groups. It is recommended that all individuals from the age of six months through forty years be immunized as promptly as possible.

There has been considerable concern in the past that infants and preschool children would

not respond adequately with the production of antibodies to the killed virus Brown and Smith studied 135 infants and 116 preschool children who were given varied courses of the vaccine. Their studies indicated that infant and preschool children respond well to poliomyelitis vaccination and that the vaccine should be effective in these age groups.

A discussion of prevention of polio would not be complete without a progress report of the work of other investigators with the attenuated living vaccine. In October of 1956 Doctor Albert Sabin⁵ of the Children's Hospital Research Foundation, Cincinnati, Ohio, announced that attenuated strains of the three known polio viruses had been isolated and tested extensively on animals and also on 130 human volunteers, and that the orally administered vaccine appeared to be effective and safe. Doctor Sabin plans to set up test areas both

in this area and in Europe to test the effectiveness and safety of this type of vaccine. It has further been established that the vaccine may be administered to individuals who have already been immunized with the killed virus vaccine and thus presumedly provide permanent protection for these temporarily protected individuals.

The use of gamma globulin as a prophylactic agent in poliomyelitis remains a somewhat controversial subject. Prior to the advent of the Salk vaccine tremendous amounts of gamma globulin were used in an attempt to prevent or modify paralytic poliomyelitis. Evaluation of its effect was difficult. In March 1954 in the Journal of The American Medical Association a report of the National Advisory Committee For Evaluation of Gamma Globulin6 was presented which stated that community prophylaxis against poliomyelitis with gamma globulin as practiced had no demonstrable effect. The Comm tee stated that, in the doses used, gamma globulin had no effect in preventing poliomyelitis of either non-paralytic or paralytic type in family contacts.

There is, however, experimental evidence that in laboratory animals when given proper dosage of gamma globulin prior to infection that they will be propected against the disease. This dosage is approximately 1 cc. per pound of body weight. I believe this information has clinical application and that in a few select patients gamma globulin is indicated in the prophylaxis of poliomyelitis. The following are the conditions necessary for effective use,

 Exposure to paralytic poliomyelitis or to any case which might be modified by Salk Vaccine.

- (2) This exposure must be an intimate one of a relatively brief interval. Example:—Child exposed by another child at a birthday party without prior contact with this child.
- (3) The patient has not had two injections of Salk Vaccine.
- (4) The gamma globulin must be given immediately after exposure.
- (5) The gamma globulin must be given in doses of 0.5 cc. per pound of body weight.

This is an expensive and impractical method of prophylaxis but does have a limited use under the above conditions.

Summary

- 1. The Salk Vaccine is a safe effective method of preventing paralytic poliomyelitis.
- Three properly spaced injections should be given to all individuals between six months of age and forty years of age.
- Gamma globulin has a very restricted use under very rigid circumstances in the prophylaxis of poliomyelitis.

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Pediatric Infections

Treatment with Lipo Gantrisin Acetyl

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Since its introduction in 1948, Gantrisin (sulfisoxazole) has become established as a therapeutically useful sulfonamide in the gamut of infectious disorders which are susceptible to this class of chemotherapeutic agents. In 1953 the application of Gantrisin for pediatric practice was facilitated by the development of the tasteless derivative, N₁-acetyl Gantrisin. Recently a further improvement in this preparation was suggested by the experimental animal studies of Feinstone, Wolff and Williams 1 who demonstrated an enhanced effect of sulfonamides in an oily base compared to the usual aqueous vehicles. Stephens and Hendrickson² extended these observations to human experience and reported that sulfonamides in a fat emulsion are more efficiently absorbed yielding higher and more prolonged blood levels. Because of this improved absorption pattern, a lengthening of the usual four to six hour dosage interval for oral sulfonamide therapy became a possibility.

In order to test the validity of this concept as regards Gantrisin Acetyl, Svenson, et al., Krugman and Frieden, and Daeschner, et al., administered the drug in a vegetable oil emulsion to a group of adults and children. Blood level determinations indicated an improved absorption and utilization of the drug which justified extending the inter-

TABLE I

Average Age	8.2 years
Average Weight (estimated)	58 lbs (26.4 kilos)
Average Dose of Pipo Gantrisin Acetyl	6.8 gm/day 117 mg/lb (260 mg/kilo) per day
Average Days of Medication	4.9 days

^{*} Chief Physician, Florida Farm Colony.

TABLE II

INFECTION		NO. OF	(CLINICALL Ist to 3rd day		OR CURED After 6th day	WORSE
Red throat		36	14	21	1	
Acute tonsillitis .		25	6	19	_	-
Acute pharyngitis		19	4	15	-	-
Acute bronchitis .		17	3	12	2	sincer
Upper respiratory						
infection (unclass			6	10	-	-
Acute gastroenteri			8	2	-	-
Nasopharyngitis				3	-	-
Stomatitis			_	-	3	-
Abcesses			1	2	-	-
Otitis media, purul			-	1	1	_
Common cold			2	_	-	-
Bronchopneumonia			_	1	-	1
Impetigo		1	-	_	1	
Sinusitis			-		1 .	(meson)
Pyelitis		- 1	1	promo	-	100000
Total		142	46	86	9	1
		SUMM	ARY OF TABLE	E II		
END RESULT	1st-3rd D	AY	4th-6th DAY A	FTER 6th DA	Y TOTAL	CASES
CURED	46 (32,4	%]	86 (60.6%)	_	132 (93.0 in 1st to	
CURED OR						
IMPROVED	_		-	9 (6.3%)	9 (6.3%) after 6th	
WORSE	_		_	1 (0.7%)	1 (0.7%)	
				Total	142 (100	00/3

val of administration to an eight to twelve hour period. Our purpose in the present study was to evaluate the general clinical response in common bacterial infections of childhood using the new lipid preparation of Gantrisin Acetyl on a twice or three times a day schedule. As a further convenience, the emulsion was made available in a more concentrated form containing equivalent of one gram of Gantrisin per teaspoonful (20%). This reduced by one half the number of teaspoonfuls of medication required per day when compared to the usual 0.5 gm per teaspoonful (10%) sulfonamide suspensions,

Material A total of 142 children with acute bacterial infections were studied. The average age of the subjects was 8.2 years. In addition to a clinical diagnosis, bacteriological confirmation by culture was established wherever possible and sensitivity tests carried out by names of discs containing various antibacterial preparations, During the early part of this projects Gantrisin discs were not available; however, in the later cases such discs were employed since it was considered of interest to report on the correlation of sulfonamide sensitivity tests with the clinical response. Routine blood counts

CASES Res Sees Res Se	TABLE III	NO. OF		PENICILLIN		STREPTOMICIN		2000	OXYTETRACYCLINE	
Stephylococcus Faecalis	ORGANISM		Res	Sens	Res	Sens	Res	Sens		
Profess Vulgaris	Staphylococcus Aureus	22	18	3	19	3		-		
Proteus Vurgansi	Streptococcus Faecalis	12	4	8	5	7	9			
Proteus Retrigeri	Proteus Vulgaris	10	10	_	10	_	8	2		
Profess Reftgeri	Proteus Morganii	8	8	-	7	1.	7	1.	-	
Aerobacter Aerogenes 5 5 2 3 5 4	E, Coli	7	6	-	6	1	4	1	-	3
Staphylococcus Albus	Proteus Rettgeri	6	6	-	5	1	5	-		_
Staphylococcus Albus 2 2 2 1 1 1 1 1 1 2 2	Aerobacter Aerogenes	5	5	-	2	3	5	-	1	
Staphylococcus Albus	alpha-Streptococcus	3	1	2	3	_		-	_	
Proteus Mirabilis	Staphylococcus Albus	2	2	_	2	_	1	1		1
Proteus Mirbilis	Escherichia Freundii	2	2	_	2	-	2	-		-
	Proteus Mirabilis	2	2	_	1	1	2	_		_
Bacillus Subtilis	Proteus Subtilis		1	_	- 1	-	1	_	1	_
Streptococcus Faecalis & Aerobacter Aerogenes 3 3 - 1 2 2 - 1 2 2 3 3 5 5 5 5 5 5 5 5	Bacillus Subtilis	1	1	-		_	-	- 1	_	- 1
Staphylococcus Albus 2 2 2 2 2 1 2 2										
Staphylococcus Albus 2 2 - 2 2 - 1 1	Aerobacter Aerogenes	3	3	-	1	2	2	-	1	
Staphylococcus Albus &	Bacillus Subtilis	3	2	1	2	-	-	_	****	-
Staphylococcus Albus &	Staphylococcus Albus	2	2	_	_	2	2	-	1	
Staphylococcus Albus &	E. Coli	1	1	-	-	1	1	-	minute	1
E. Coli										
Bacillus Subtilis 2	Aerobacter Aerogenes	2	2	-	_	2	2	-	1	
Bacillus Subtilis	E. Coli	. 1	1	_	_	1	1	-	-	- 1
Aerobacter Aerogenes &	alpha-Streptococcus &									
Stephococcus Faecalis 3 3 2 2 4 3 3 3 4 3 5 4 3 5 4 5 5 5 5 5 5 5 5	Bacillus Subtilis	2	1	1	1	1	2	_	-	2
Escherichia Freundii & Clostridium Follax	Aerobacter Aerogenes &									
Clostridium Follax	Klebsiella Pneumonia	. 1	1	-	_	1	- 1	_	1	-
Proteus Rettgeri & Bacillus Subtilis 1 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - - 1 - - 1 - - 1 - - 1 -	Escherichia Freundii &									
Bacillus Subtilis	Clostridium Follax	. 1	- 1	-	- 1	-	_	-	-	1
Staph. Albus, Prot. Rettgeri & Aerobacter Aerogenes 1	Proteus Rettgeri &									
Aerobacter Aerogenes	Bacillus Subtilis	. 1	1	-	1	-	1	_	- 1	-
Not specifically identified	Staph. Albus, Prot. Rettgeri &									
MIXED INFECTIONS Staphylococcus Aureus & Bacillus Subtilis	Aerobacter Aerogenes	. 1	1	-	_	1	1	_	-	1
Staphylococcus Aureus & Bacillus Subtilis	Not specifically identified	. 7	6	1	4	3	6	Georgia	3	4
Bacillus Subtilis 4 3 1 2 2 4 — 1 3 Streptococcus Faecalis 3 3 — 3 — 2 — — 3 Aerobacter Aerogenes 3 2 — 1 2 2 — 1 2 B. Influenzae 2 2 — 1 1 — — 2 E. Coli 2 1 — — 1 1 — 1 1 Clostridium 2 2 — 1 1 — 1 1 — 1 — 2 — - 1 1 — 1 — 2 — - 1 1 — 1 — 2 — - 1 — 1 — - 2 — - 1 — 1 — - 2 — 2 — - 1 — 1 — - 2 — 2 — 2	MIXED INFECTIONS									
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were made before and at the termination of drug therapy.

Clinical results were graded as cured, improved, unchanged or worse. The time elapsed between the start of medication and both clinical clearing and the establishment of normal body temperature was recorded. The appearance of any untoward effects attributable to drug therapy was carefully observed.

The Lipo Gantrisin Acetyl,* containing the equivalent of one gram of Gantrisin per teaspoonful, was administered in doses of approximately 100 mg per pound per day in either two or three divided doses as summarized in Table I.

Adjunctive therapy was employed in only thirteen cases, as follows: penicillin, 5 cases; penicillin and streptomycin, 2 cases; penicillin, chloro-mycetin and nitrofurantoin, 1 case; chloromycetin, 1 case; chloromycetin and erythromycin, 1 case; tetracycline, 1 case; nitrofurantoin, 2 cases.

Results

Clinical Response Of the 142 cases, all but two cases showed a satisfactory response and were graded as "cured." A more definitive analysis is presented based on the time lapsed between the start of medication and clinical improvement. (Table II).

*Hoffmann-La Roche Inc., Nutley, New Jer-

Temperature returned to normal in an average of 2.4 days.

One hundred thirty-two (93.0%) of the patients treated were classified as "cured" by the end of the four to six day period. An additional nine (6.3%) of the cases required more than six days to respond. It is difficult to attribute clinical cure to the medication in those patients whose clinical course extended beyond the six-day period.

The two cases not graded as cured consisted in the first instance of a ten year old boy with purulent otitis media who still had a little drainage after sixteen days, and secondly, a case of an eight year old girl with a massive bronchopneumonia due to Proteus morganni. This patient showed a progressive downhill course and died.

Bacteriological Studies A summary of the organisms cultured from the sites of infection and the available data on the sensitivity of these bacteria to discs containing different antibacterial agents is presented in Table III,

Blood Counts The average before and after figures for the various blood elements are shown in Table IV.

There was no evidence of any blood dyscrasia or bone-marrow depression in any of these 142 cases,

Untoward Effects There were few significent side reactions. Those deserving mention are listed in Table V.

TABLE IV

	WEC	POLYS	LYMPHOS	RBC	HGI
BEFORE THERAPY	15.079	68.2	31.5	4.623.000	82.1
AFTER THERAPY	10,428	62.1	37.4	4,182,000	83.6

REACTION	MANAGEMENT	NO. OF CASES
Skin rash for 3 days		1
Skin rash developed on 12th day	Responded to antihistamine	1
Urticaria (giant)	Responded to cortisone	1

Discussion The results of this study testify to the overall usefulness of Lipo Gantrisin Acetyl for the treatment of common bacterial infections in children. Since a control series was not run it is not possible to compare these results quantitatively with any other therapeutic regimen other than by our own cumulative experience. The medication schedule of two or three times daily has been most satisfactory and convenient.

We would like to comment briefly on the dosages employed. In recent years there has been a tendency to talk in terms of minimum effective doses of antibacterial drugs. By contrast, it is our belief that sulfonamides should be given in doses as high as consistent with safety and practicability of administration. The use, in this study, of doses in the range of 100 mg per pound of body weight per day has been shown to be highly effective, well tolerated and easy to administer. For example, a sixty pound child would receive six teaspoonfuls a day divided into three teaspoonfuls twice a day or two teaspoonfuls three times a day. The availability of Lipo Gantrisin Acetyl in a concentrated form and the palatable taste of the preparation greatly enhance the reception of the medication by acutely ill children.

The use of sensitivity discs are intended to provide a rationale for the selection of appropriate antibacterial therapy. While this applies in the case of the antibiotics, the response to sulfonamides in the *in vitro* disc tests is much less reliable. There was no significant correlation between the clinical response to Lipo Gantrisin and the result of the laboratory sensitivity studies. A negative report from the Gantrisin disc test should not therefore discourage the use of Lipo Gantrisin in therapy.

Summary and Conclusion

1. A group of 142 children with a variety of common bacterial infections were treated with a vegetable oil emulsion of Gantrisin (sulfisoxazole) Acetyl.

 Bacteriological studies including cultures and sensitivity studies were performed in most cases.

3. One hundred thirty-two cases (93.0%) showed a clinical cure

within six days with 46 of these cases (32.4%) responding within three days. One patient with purulent otitis media still had drainage after 16 days, and one patient with a massive bronchopneumonia due to Proteus morganii failed to respond.

4. There were two patients who developed a skin eruption and one

case of giant urticaria representing an incidence of side effects of 2.1%.

 There was no significant correlation between the results with Gantrisin sensitivity discs and the clinical course of the infection treated with Lipo Gantrisin Acetyl. The availability of Lipo Gantrisin Acetyl in a form containing one gram per teaspoonful facilitates the administration of full therapeutic doses to children on a dosage schedule of only two or three times daily.

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Clini-Clipping

Method of aspiration of distended bursae.





The "Binge" Drinker's Liver

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There is a distinct type of liver frequently found at autopsy, occurring in chronic alcoholics, who have been on a prolonged bout of drinking until hepatic failure results in hospitalization. Here at Bellevue Hospital it is known as the "Binge drinker's liver." At autopsy, examination the liver is found to be enlarged, firm, yellow, and to have a unique group of microscopic findings including active fibrosis, hepatic cell necrosis with hyaline degeneration and leukocytic infiltration. In addition, there is usually fatty infiltration and some areas of regeneration.

This entity has long been recognized, as by Mallory in 1911 ¹ and Hall and Ophuls ² in 1925 who have written excellent descriptions of the pathology. Only recently, however, has it come to be emphasized as an entity. This paper is presented to describe the clinicopathological features involved and to compare three studies of it made in three different large charity hospitals.

Various synonymous descriptive names have been applied in the literature as in the following three studies reviewed, which will hereafter be referred to as follows: Group I. Acute Hepatic Insufficiency of the Chronic Alcoholic, by Gerald B. Phillips and Charles Davidson at Boston City Hospital.³ Group II. Florid Cirrhosis, by Hans Popper, et al. at Cook County Hospital, Chicago.⁴ Group III. Progressive Alcoholic Cirrhosis, by Ernest Hall and Wendell Morgan at Los Angeles County Hospital.⁵ It also is known as chronic toxic hepatitis and subacute portal cirrhosis.

The importance of studying this entity is twofold. 1) If it truly represents a stage in the progression to a chronic cirrhotic liver, it may throw light on the pathogenesis of alcoholic cirrhosis. 2) As an entity in itself, its potentially fulminant course demands early recognition and careful therapy.

There were some differences in the purposes and criteria which directed the selection of the patients in these three papers. These differences, which will be mentioned, should be weighed in com-

Clinical Features

Sex—In combining the groups, males predominate over females in the ratio of about 3:2.

Female 14 Group Male 14 20 44 24 111

Age-The average age of death appears to be in the forties, which is considerably younger than the usual age of death in patients with chronic alcoholic cirrhosis

Group | Average age 44.5 years II Three fourths between 27 and 50 years

III Average age 46.8 years

Race—The ratio of white patients to negro patients varied, but was preponderantly white.

Group I 16% white, 1% negro
II 74% white, 26% negro
III 35% white, 8.8% negro, 7.35% Mexican.

Alcoholism-The patients who were able to give a history admitted to chronic alcoholism and most of these had been drinking more heavily than usual prior to the time of admission.

Group! All but one were known to be chronic elcoholics drinking up to the time of admission and several had increased intake for weeks or months before

Group II 86% were chronic alcoholics by history.
Group III 80% by history drank as much as a pint or quart of whiskey a day.

Other Alcoholic Symptoms

Group 1 3 of 18 had delirium tremens, one Korsakoff's syndrome, one Wernicke's syndrome, one mental deterioration attributed to alcohol.

No data.

Group III 10 or 51 had some form of alcoholic psychosis.

7 had pellagra or alcoholic neuritis.

Nutrition

Group I All had poor dietary intake for months to years. 14 of 17 had more severe anorexia in the weeks to months prior to admission with decrease in food intake. Nine ate almost nothing 2 to 5 weeks prior to admission. Four patients had neusea and vomiting several weeks prior to admission. Group !! 43% had a history of prolonged starvation. 9% were obese.

Group III No data.

Jaundice

Group 1 17 of 18 noted jaundice for two days to 4 months prior to admission.

Group II 91% joundiced preferminally.
Group III 50% joundiced during hospitalization.

Ascites

Group 1 11 of 17, questionable in 3, absent in 3.

Group II 43%

Group III 60.3%

Bleeding Tendencies

Group! 5 of 17 had massive GI Bleeding.

Group II 17% GI Bleeding, epistaris 20%. Group III 35.2% esophageal varices with gastric hemorrhage.

Fever

The highest oral temperature occurred about the third hospital day and was between 98.0 and 105.9° F.

Group II No data.

Group III No data.

Coma				
Group	Drowsy 7/17	Coma on Admission	Come in Hospital 13/17 20%	Infection 1/17 sore throat 37% pulmonary complaints.
III		3/56		14% URI Of 10 cases with no history, all but one had severe in- fection and most of these died,

Gross findings at autopsy examination

The liver is enlarged and has a smooth, granular or finely nodular surface. The cut surface is yellow, brown or green. It is firmer than normal and may have much fat or none at all. The spleen is usually enlarged and weighs from 200 to 300 grams.

Liver				
	Group I	Weight 1-1600 grams 2-1800-2000 5-2000-2500 9-2500 plus	Coler yellow yellow green	Consistency granular surface resistence to cutting.
	Group II	2240 grams	brown, yellow green	Usually smooth. Fine granularity
	Group III	average 2760 grams ave	erage	29% increased resistance. 61.5% smooth to finely granular

Spleen

Group I	15 of 17 - 200 plus grams
Group II	Average-258 grams, 62% over 175 grams
Group III	Average-360 grams

Microscopic Findings

The microscopic picture is that of prominent parenchymal disorganization, in some cases including central lobular necrosis. There are well marked signs of hepatic cell necrosis including swelling of cells and changes in their size. The cytoplasm is often clumped and the refractile hyaline bodies of Mallory are usually present. There may be diffuse bile staining of cytoplasm and possibly bile casts. There may be wide differences in the amount of fatty infiltration and in some cases there may be none present. Nuclear changes include pyknosis, swelling and vesiculation and disappearance. An important feature is the prominent number of white cells, predominantly neutrophiles, with lesser amounts of lymphocytes, which are present most often in the portal areas. There is an increase in connective tissue radiating from the central canals, the portal areas and the areas of necrosis and inflammation. In some cases there may be pronounced focal regeneration as indicated by binucleated cell.

Group I	Regeneration of Liver Cells Multiple nuclei	Bile Duct Proliferation	Fibrosis Advanced, portal mostly diffuse in some
	frequently seen	*******	
Group II	Some focal regeneration	Increased	Definite connective tissue increase from portal triads, central areas, and areas of
Group III			necrosis, 4.4% slight 20.6% moderate 47 % marked 28 % extreme all mainly periportal
			Cellularity of fibrosis 72 % cellular 16.2% moderately cellular 54.4% mod. cell, to dense 7.4% dense

	Intracellular Bile	Bile duct Casts	Fat
Group II	outstanding often	often	Wide differences, 12 of 17 had large amounts Present in almost all, some with large fa-
Group III			cysts. Three fourths were "fatty" 7.4% no fat
			25 % small amount 22 % moderate amount 20.6% extremely fatty

Lab Work

The usual signs of hepatic failure resulting from parenchymal cell necrosis and various degrees of intrahepatic biliary obstruction are seen in the liver function tests. Of particular note are the elevated white cell counts.

	WBC	Alcohol Stool	ic Urine	Bile	Cephalin Floc	Alkaline Phos'tse	Prothrombin Time
Group I	50% over 15,000	10/16	16/17	Bile	2+	5 plus U. 0/5	30% or less 9/16
Group II	10,000+ 75% 20,000+ 20%				2- -		
Group III							
	Ictoric	Index	TP		A	G	Total Chol
Group !	only one elevated	not					
	10/17	100U					
Group II	above 20 " 100 " 200	100% 44% 11%	- less the 6 gms 47%		less than 3 gms 68%	- over 3 gms 58%	less than 120mg% 33%
Group III	No Data	7.0	12 70		/0	/0	/0

paring the findings.

For proper orientation as to frequency and mortality of the disease, it is pointed out that all of these patients were seen in charity hospitals and that they died of their disease. Two of the studies are based entirely on autopsies. The other study, by Phillips and Davidson, is based partly on liver biopsies and is subdivided into those who died and those who recovered. Only the patients who died are considered for purposes of comparison with the other series.

Group I. Acute Hepatic Insufficiency of the Chronic Alcoholic

The study by Phillips and Davidson

is of 56 chronic alcoholics. They were arbitrarily selected to see the clinical significance of the distinctive lesion in the liver of alcoholics, characterized by hvaline degeneration and necrosis of parenchymal cells, with leukocytic infiltration as first described by Mallory. Fifty-four of the fifty-six patients had been drinking until the time of hospitalization. Excluded were patients with serious infection or hemorrhage just prior to, or at the time of admission. Patients were studied by autopsy or liver biopsies. There were three sub-groups: a) Thirteen alcoholic patients with marked jaundice who were observed clinically

and studied by autopsy or liver biopsies.

b) Eleven cases were from autopsy files with findings similar to the first group.
c) Thirty-two alcoholic patients who had had autopsy or liver biopsies.

Group II. Florid Cirrhosis—The study by Popper, et al. is of thirty-five patients arbitrarily selected from a series of 11,743 autopsies as examples of the subject disease known as chronic toxic hepatitis.

Group III. Progressive Alcoholic Cirrhosis—The study by Hall and Morgan is of a group which was believed to show the true picture of alcoholic cirrhosis in the early progressive stages. Sixty-eight cases were selected from 12,000 autopsies on the basis of liver weights (2000 grams and over), and the presence of hepatic necrosis, portal cirrhosis showing active proliferation of connective tissue, and so-called "alcoholic" hyalin. The fact that at least 80% of these patients had chronic alcoholism by history was felt to give firm basis to the term "alcoholic cirrhosis."

Classification of Entity —Popper, et al. regard this as a subscute or chronic hepatocellular degeneration in a nutritional fatty liver and believe it is a link between the fatty type liver and cirrhosis. Hall and Morgan regard it also in this manner. Phillips and Davidson do not make a point of its relation to the chronic cirrhotic liver but do conclude that the symptom complex seen at this stage of disease is independent of the amount of fat present in the liver. One suggestion is that some livers had more fat, but may have lost it preterminally.

Treatment—In view of the malnourished condition of these patients and also their predilection for going into coma, rational treatment entails an adequate food intake with avoidance of ammonia producing substances. The latter point is being widely stressed in the literature.

In view of the frequent leukocytosis, and the presence of fever and infection often seen, more emphasis might be given to vigorous early antibiotic therapy as an important therapeutic and prophylactic agent in this type of liver failure.

Conclusion

A particular type of liver pathology found in chronic alcoholics who have been on a prolonged bout of drinking is described, along with the associated clinical findings. The findings in separate studies of, this clinico-pathological entity from three different charity hospitals are compared.

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Coronary Atherosclerosis

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It is generally recognized at present that the process of atheromatosis, i.e., of atheroma depositions in various arterial branches of the vascular tree is not necessarily a condition of old age, as assumed previously, but may, and actually does, occur at any age. In a report published in 1951 by Yater and his group, coronary atherosclerosis caused death or myocardial infarction in 866 soldiers aged 18 through 39 years. Reports of a similar nature have been made by other authors, notably Enos and

Since chemically the atheroma is made up to a preponderant extent of cholesterol esters, the possible etiologic relation of cholesterol to atheromatosis has naturally attracted wide attention.

The literature dealing with the subject is at present so voluminous that its review is practically beyond the scope of any one individual.

Most authors are practically unanimous in the opinion that there is some aberration in the lipoprotein metabolism in most if not nearly all cases of atheromatosis; however, they similarly believe that this is only one of many causes and that further extensive studies are essential in order to elucidate and determine clearly the cause or causes of atheromatosis.

This report deals with a study begun in November of 1952 and continued to the present time. Some of the results obtained were reported previously.

The purpose of this study was to determine the following:

- 1. Frequency of hypercholesterolemia in supposedly normal individuals.
- Frequency of association of hypercholesterolemia and clinical coronary atheromatosis.
- Relation of thyroid function, as determined by the basal metabolic rate, and hypercholesterolemia and atheromatosis.
- 4. Frequency of hypercholesterolemia in cases of essential hypertension.
- Frequency of hypercholesterolemia in proved cases of myocardial infarction.

The procedure of study was uniformly as follows: Every individual was examined under accepted standard conditions, the examination including:

- 1. Urinalysis.
- 2. One or more electrocardiograms.
- 3. One or more BMR's.
- Complete blood count, hematocrit, blood sugar and blood serum chol-

White.

esterol determinations the latter by the Lieberman modification of the Bloor method.

- 5. Chest roentgenogram.
- In some cases a study of the gallbladder function.

The blood sugar was done in order to eliminate from the comparative evaluation of the blood serum cholesterol values those with a diabetic type of blood sugar value, since it has been known for a long time that the frequency of hypercholesterolemia in diabetics is considerably greater than in those with a normal blood sugar.

To date approximately 546 patients were examined in the above outlined manner. Of these, 90 were diabetics, 36 were patients with proved myocardial infarction, 120 were hypertensive of the class of essential hypertension, and the remainder could be classed as average normal. The range of the blood plasma cholesterol values in the different groups is given in Table 1.

The sexes were approximately evenly distributed except that the males predominated to a slight extent in the hypertensive and in the diabetic groups, and were nearly 100 percent higher in the group of myocardial infarction.

Each patient was weighed prior to examination and his weight was marked "normal", "obese" or "undernourished", using the charts recommended by the American Heart Association.

The age of the patients of the normal group varied between 18 and 80, that of the diabetic group between 17 and 86, that of the group of myocardial infarction between 17 (a boy) and 71 years.

Surprisingly, obesity, i.e., overweight was found in nearly 40 per cent of all cases. The frequency did not differ markedly among the different groups.

Hypometabolism, as measured by the basal metabolic rate (10 per cent or lower and done by the writer) particularly in individuals above 50 years of age was unusually frequent, being found in about 55 per cent of these cases.

Accepting 225 mgm/100cc, as the highest normal cholesterol value, a hypercholesterolemia was found in approximately 23 per cent of the normal group, in 44 per cent of the hypertensive, in 51 per cent of the diabetic and in 61 per cent of the myocardial infarction group.

No correlation between overweight and hypercholesterolemia was observed; of the diabetic group 58 per cent were overweight; the hypertensive group had an overweight figure of 60 per cent and the myocardial infarction group of 65 per cent. Hypercholesterolemia was not

Table 1

	Cholesterol Value						
	No. of Patients	Up to 250mg.	250 to 300mg.	300mg. and over			
Normal	300	45 patients	17 patients	15 patients			
Hypertensives	120	25 patients	9 patients	18 patients			
Diabetics	90	23 patients	13 patients	12 patients			
Myocardial Infarction	36	II patients	8 patients	3 patients			

found more often in the higher aged (geriatric) group, as claimed by some authors.

It has been stated that the frequency of myocardial infarction is about 20 per cent greater among hypertensive than normotensive patients. In this study only 3 of the 36 cases of infarction had hypertension, while 33 were definitely normotensive.

White, Gertler and others have called attention some years back to the possibility that the process of atherosclerosis may be basically an expression of some "gene" deviation in the carrier which would predispose the carrier to some metabolic anomaly as well as to some anatomic change in the structure of the arterial walls of the vascular tree: for instance greater thickness of the mediaconsequently a narrower lumen (everything else being constant); but some "gene" deviation could also manifest itself physiologically, for instance in the form of a decreased colloidal stability of the lipoproteins and a consequent easier precipitation of the cholesterol esters, or an increased permeability of the endothelial lining of different arteries to the same cholesterol compounds. All of these changes could, therefore, make possible the development of atherosclerosis in some but not in other individuals. This hypothesis would also explain the not uncommonly observed hereditary tendency of coronary disease in certain families.

In our studies nearly 70 per cent of the 36 cases of proved myocardial infarction gave a history of coronary disease in one or more members of the family. The reliability of a history of this type is, however, questionable, since "heart trouble" means a different thing to different people, particularly in this instance, where the patients dealt with were mostly artisans, Navy Yard employees, Government clerks, housewives, etc., and where it was practically impossible to exclude "suggestion" irrespective of how the question was phrased. Surprisingly, however, a "positive" family history of hypertension was obtained in approximately the same percentage of cases of hypertension as in the group of coronary occlusion with infarction. Findings of this type definitely indicate that heredity plays some role in the development of atherosclerotic cardiovascular disease.

No significant relationship was found between body structure or "somato type" of the individual (endo-ecto or mesomorph) and hypertension or coronary disease; overweight however seemed to play a significant role (62 per cent of hypertensive and 65 per cent of the myocardial infarction cases). How it is related, if it is, the hypertension and to coronary disease is a moot question since approximately 40 per cent of the normal group were overweight to a variable degree. I have mentioned previously that there seemed to be no relationship between the weight of the individuals and blood serum cholesterol.

The relationship of the thyroid and the blood serum cholesterol has been extensively studied and reported in the literature. The opinion is practically uniform that hypothyroidism is in most instances associated with a high blood serum cholesterol value. There is reason to believe that the thyroid hormone is intimately related not only with the cholesterol but with the lipid metabolism in general. The type of relationship, however, is not exactly known. There apparently exists some alteration in the function of the thyroid gland

in the direction of hypofunction. The influence of this alteration on the genesis of coronary heart disease is not immediately apparent, but since coronary disease is very rarely found in combination with hyperthyroidism, it is quite conceivable that the thyroid plays some role in the origin of coronary heart disease.

Hypercholesterolemia was found in approximately 22 per cent of the 300 normal patients. The higher than normal blood serum cholesterol values were somewhat more frequent in males than in females. This harmonizes with the universal finding that up to the age of menopause or approximately up to the age of 40 years myocardial infarction occurs three to twenty times more often in men than in women, but that this disproportion disappears after 50 or 55 years of age. Apparently the female sex hormone has some influence. Partly this influence was demonstrated experimentally, thus further indicating that the genesis or atheromatosis is rather complex. It was also found that experimentally atheroclerosis may be induced in animals by cholesterol feeding easier after the thyroid function has been supressed or decreased either by surgical ablation or by goitrogenic (thiouroccil) drugs. Clinically it is known that hypercholesterolemia is a very common occurrence in cretins and in myxoedematous adults, while it is extremely unusual in cases of Graves' disease.

The effects of diet on the blood serum cholesterol and the relation of diet to coronary atherosclerosis have been studied extensively, both clinically and experimentally.

A unique clinical approach was made in the study of the influence of diet on coronary atherosclerosis, Ethnic groups

of various types were examined in relation to frequency of coronary occlusion, hypercholesterolemia and certain dietary Chinese, Eskimos and Okinahabits. wans are supposed to have as a rule relatively low blood cholesterol values: it is stated that atherosclerosis is practically unknown among these people, significantly their diet presumably contains very little cholesterol. Stare reported to have obtained similar results from a study of Guatemalans. In Denmark and Norway the death rate from coronary atherosclerosis supposedly dropped better than 50 per cent during the War years of German occupation, during which time the population experienced a severe shortage of fats. Similarly, a considerable decrease in the death rate due to coronary disease was reportedly observed in England during the War years associated with an extreme fat shortage in the diet. In 1954 some studies were carried out on population segments of various provinces in Italy and supposedly the lowest coronary death rates were obtained in factory workers whose diet was rather deficient in fats while the death rate from coronary atherosclerosis among the "middle" class was no different from that which obtains in the United States, Findings of this type obtained by different researchers in different parts of the world cannot be purely coincidental. The conclusion is inescapable that in some way diet is related to the degree of incidence of coronary atheromatosis. A. Keys has stated that his studies revealed that in the United States the death rate increase from coronary atherosclerosis was somewhat parallel to the increased per capita consumption of daily products particularly butter fat which took place in the last twenty-five

years. The situation was summed up succinctly by Dr. W. Yater as follows: "Choose your ancestors, be born a male, and live in a country where the standard of living is low."

For about two years I have followed the blood cholesterol values of thirty normal but hypercholesterolemia patients, picked from the normal group. There were 18 men and 12 women varying in age from 26 to 63 years. The blood serum cholesterol values of these patients varied from 300 to 550 mgm/ 100cc. The diet of these patients was limited only in relation to butter, oleo and gross fat. In all except three there occurred a significant decrease in the blood cholesterol, in some the values reached normal but in most they remained above normal but nevertheless considerably lower that originally. As stated above in three of the patients there was no significant change in the cholesterol values.

I may mention, at this point, that two of the patients of the normal group and one of the hypertensive group, but of the 22 per cent class with hypercholesterolemia have died suddenly while this study was in progress. One, a male 46 years old, about 10 days after some minor surgical procedure on the right eye-lid; his blood serum cholesterol value was repeatedly above 300 mgm/100cc; the other a woman 48 years of age having hypertension (asympto-220 200

matic) of — — with a blood

serum cholesterol value of 275-300 mgm per cent. She died while waiting for a cab to go down town shepping; and one a male 54 years of age, normotensive with a persistent cholesterol value of 300 mgm per cent. Since all of these

patients have not seen me in over two months, they were all autopsied by the coroner and in each case the report was "Extensive Coronary Occlusion."

An over-all evaluation of the data obtained from this study makes possible the following statements. Overweight is a very common finding in cases of coronary disease. A lowered metabolic rate pointing to a decreased function of the thyroid gland is a significant feature. Up to the age of 50 years males are affected to a considerably greater extent than females, but the predilection for the male sex seems to be non-existent with the appearance of menopause in the woman, in other words, the female sex hormone somehow exerts a protective effect against coronary atheromatosis. Diet in which animal and vegetable fats play a significant role seems to favor the development of atheromatosis. This has been shown experimentally in animals and has been more or less shown to exist clinically, particularly in countries where low-fat diets were found to be associated with a very low mortality due to coronary atheromatosis. In my own studies, on a limited number of cases, (30) I have found that a relatively low fat diet leads to a decrease in blood serum cholesterol values in about 90-91 per cent of the cases. As pointed out previously coronary artery disease seems to be more prevalent in some countries, namely in those with a higher standard of living, substantiating somewhat the relationship of diet to this dis-

It could be postulated, therefore, on the basis of these limited data that even though the etiology of coronary atheromatosis may be very complex nevertheless it seems plausible that one deals in these cases with a phenomenon resulting from some "gene" anomaly; the "gene" deviation may be of a type which is inherited as a recessive trait and would therefore manifest itself only in a homozygotic individual. This would account for a positive family history in some but not in all cases of coronary artery disease.

It is conceivable that this genotypic anomaly is of a type which exerts some influence on the endocrine system particularly the thyroid gland and gonads which in turn influence the fat metabolism in a way leading to a decreased colloid stability and easier precipitation of cholesterol esters and atheromatous plaque formation.

If this postulate has some merit then it is conceivable that the same individual with the same hereditary predisposition could under certain circumstances live to old age without ever showing any clinical or anatomical manifestations of coronary disease; on the other and, having achieved a higher standard of living and in consequence a better state of nutrition he may develop coronary atheromatosis.

Since it appears that in a random group of patients twenty-two per cent or more show a higher than normal blood serum cholesterol, it is not surprising that the death rate due to coronary disease is as high as it is.

No doubt the change in the age make up the population has a definite influence on the increased mortality due to this disease. There are at present in this country about 20 million people between the ages of 55 and 65 years, and over eight million of over 65 years of age. Had these people lived only to the age of lower than fifty, few of them would have had an opportunity to die from coronary atheromatosis and coronary occlusion since the process is apparently relatively slow in development and the anatomic changes reaching a point that would lead to partial or complete coronary occlusion and consequent death, would have probably never reached that

It has been shown experimentally that in animals, the process is reversible up to a certain point. Whether this applies to humans remains to be determined.

The problem is being studied extensively throughout the world; for the present, however, until our knowledge is more exact and definite, such data would indicate that the best that can be offered to the patient with "hypercholesteremia" is advice to refrain from using excessive fats in his diet.

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Of Low Spirits

All who have weak nerves are subject to low spirits in a greater or less degree. Generous diet, the cold bath, exercise, and amusement, are the most likely means to remove this com-It is greatly increased by solitude and indulging gloomy ideas, but may often be relieved by cheerful company and sprightly amusements.

When the low spirits are owing to a weak and relaxed state of the stomach and bowels, an infusion of the Peruvian bark with cinnamon or nutmeg will be proper. Steel joined with aromatics may likewise in this case be used with advantage; but riding and a proper diet, are most to be depended on.

When they arise from a foulness of the stomach and intestines, or obstruction in the hypochondriac viscera, aloetic purges will be proper. I have sometimes known the Harrowgate sulphur-water of service in this case.

When low spirits have been brought on by long-continued grief, anxiety, or other distress of mind, agreeable company, variety of amusements, and change of place, especially travelling into foreign countries, will afford the most certain relief.

Persons afflicted with low spirits should avoid all kinds of excess, especially of venery and strong liquors. The moderate use of wine and other strong liquors is by no means hurtful; but when taken to excess they weaken the stomach, vitiate the humours, and depress the spirits. This caution is more than necessary, as the unfortunate and melancholy often fly to strong liquors for relief, by which means they never fail to precipitate their own destruction.

> WILLIAM BUCHAN, M.D., Domestic Medicine . . . a Treatise on the Prevention and Cure of Diseases-(1811) -S. A. Oddy, United Kingdom.

Is the General Practitioner Vanishing?

BERNARD J. FICARRA, M.D.*

Roslyn Heights, New York

Recent years have witnessed many written outbursts supporting the contention that the general practitioner is approaching his end as a vanishing American. Nothing is farther from the truth. The general practitioner has been categorized as the family doctor. As such he will endure as long as the family exists. His place in society is not vulnerable but is invincible as long as he desires it to remain impregnable. Wherefore then the turmoil! Why must each hospital medical board be bombarded with motions concerning the general practitioner! Why the discord as written in professional and non-professional journals! Whence arises the discontent! Wherein lies the animosity between the specialist and the general practitioner! Who is to blame for this discord in our medical harmony?

Strange as it may seem, the general practitioner himself is the source of origin for this disquietude. As long as the family doctor remains the family doctor, his patients will always honor and respect him. The days are far behind us when the patient did not or could not evaluate a doctor according to his talents. Today the patient knows the capabilities of his doctor. He is cognizant of the fact that specialists are necessary in certain situations. The patient knows that his family doctor is quite competent to treat his family, deliver his wife's baby unless complications arise and advise him on other medical problems. He also knows that in the treatment of major surgical problems his family doctor is not expected to be an expert. It is at this point that some general practitioners become their own worst enemies.

A man untrained in major surgery feels impelled at times to do a procedure which perhaps he has never performed or has performed only once or twice in his life. This physician ad-

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mits his patient to the hospital and then, if he has surgical privileges there, will attempt to manage the case without consultation. With or without the assistance of a trained surgeon, the procedure is accomplished. In this particular case the patient may or may not do well. However, eventually in a future case a complication will arise. Then the general man seeks the advice of a specialist. When he discusses the situation with a specialist, the untrained man will realize how much difference there is between a trained and an untrained surgeon. I do not wish to enumerate the differences because an evaluation of the situation through the mirror of an honest conscience will make the obvious distinction. Nor do I wish to depreciate the talents of the man in general practice. I know many men of this type who do surgery, do it well, but I confess they are like a sore thumb when compared to a trained surgeon. Unfortunately with every surgical procedure he performs the general practitioner thinks himself an expert. Such inward pleasure is gratifying but it is unsafe. I do not object to a man doing minor procedures or those which he is capable of performing. I do object to an untrained surgeon who has limited surgical privileges who tries to do that which he cannot. I object to a man attempting to do gallbladder and common duct surgery when his total experience encompasses two cases in 5 years. What glory does he seek, when even master surgeons have had difficulty with a common duct stricture?

Are the headaches resulting from surgical errors worth the fee received? Is the sin of pride so great that destructive surgery must result? I repeat there is no glory in performing one surgical procedure a year; for a complication may result which will give one an acute coronary. Moreover the surgeon of today is not merely a technician. He concerns himself with preoperative evaluation of the patient and postoperative care. This complete experience of a trained surgeon often prevents an unforeseen complication. Moreover, postoperative care has undergone radical changes in recent years, that unless the untrained surgeon is attuned to the tempo of the times, he is practicing antediluvian surgery.

Then, too, there is the family doctor who calls in a surgeon to help him. After a time the general practitioner will ask the surgeon to let him do the case, whereupon, the surgeon becomes the assistant and the general practitioner becomes the surgeon. During the operation the assistant is an advisor and the surgical ignorance of the operator is in evidence. If anything goes wrong the general practitioner will blame the surgeon who assisted him. If all goes well he impresses the family with his surgical excellence.

These facts exist whether or not they are accepted by the reader. I speak as a surgeon who has seen all the situations described herein. I do not belittle the general practitioner, but he creates his own ugly situations, and then cries out as a victim when he is called to task. If he wishes to do major surgery, then he must cease to be a general practitioner. He cannot be both: that age has passed and will never return again. There is honor in both stations of medical life. Choose one or the other and the end result will be harmony between the general practitioner and the surgical specialist.

Inotropic Action of Digitalis Glycosides

KENNETH BARTON, M.D. New York, New York

PART 2

Digitalis If one peruses, only superficially, the literature on the cardiac action of digitalis, he will become aware of the fact that it has not been until recently that full acceptance was given to the premise that there is a direct action upon the myocardium by the glycoside. It is still in some quarters that venous and cardiac tone and cardiac slowing are spoken of as the mechanisms of action of digitalis. Among the first proponents of a direct inotropic effect on the myocardium were Gold and Cattell.20,21 They performed experiments using the papillary muscle of the right ventricle of the cat. They were able to demonstrate a consistent response of contraction to oubain once fatigue and decreased force of contraction had set in. Inasmuch as stimulation was done at a constant rate, coronary flow was not a factor, and diastolic length was kept constant, they conclude that there is direct inotropic effect of the glycoside on the myocardium. Bloomfield, 22 too, is among the many who have added weight to this conviction and his work demonstrated an increased systolic contracile force and stroke output which preceded any reduction in systemic venous pressure.

We may return now to the cathetherization studies which were mentioned previously. It will be recalled that they helped to reveal fundamental metabolic facts concerned with chronic low output failure. These same studies performed at a time when the heart is under the influence of glycosides tell us more concerning their mode of action. Strophanthus lowers the cardiac output of normal subjects, but does not alter the coronary blood flow per 100 grams of left ventricle or the coronary A-V difference, therefore, cardiac oxygen consumption stays the same and since less work is done the mechanical efficiency is reduced.

In the failing digitalized heart, catheterization studies reveal an increase in cardiac output, again with no change in

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In the failing digitalized heart, catheterization studies reveal an increase in cardiac output, again with no change in

coronary flow or oxygen extraction and again, therefore, changing the efficiency, in this case increasing it.10,23 The efficiency was not raised through decrease in energy consumption and, therefore, a logical assumption is that somehow an increase in the facility of conversion of energy to work was invoked. Once again, the contrast from the heart-lung preparations is pointed up, and Starling's Law is found contradictory. Since the catheterization studies have shown no change in oxygen consumption with compensation, and at the same time the diastolic length of fibers is lessened (allowing us by virtue of Starling's Law to expect a decreased oxygen consumption per 100 grams of ventricle), we may conclude once again that the acute stress experiments are not applicable to the situation that prevails in chronic clinical failure. Confirmation of this finding is documented in recent experiments by Kwang Soo Lee.24 In these experiments which are more easily controlled than those previously cited on the intact heart, he studied the effect of oubain on cat papillary muscle. During stimulation at constant rate when oxygen consumption was stable oubain was added to the bath, and without a change in oxygen utilization a significant increase in the force of contraction was realized. Again it is suggested that the means for this must reside other than in energy production. That it may reside in sources of energy other than aerobic metabolism is also suggested by the author as a possibility. Since so much evidence has been put forward, some of it having been mentioned here, that one must look beyond the oxidative energy production for the raison d'etre of failure and likewise the modus operandi of the

glycosides, we will now review the highlights of investigators' work performed with the idea in mind that in some manner ATP is acted upon by the glycosides.

ATP Wollenberger 25, 28, 27 has performed his experiments admittedly to add weight to the hypothesis that the glycosides work by improving the utilization of energy and, therefore, that the defect in failure is in the initial anaerotic stage of contraction, and not concerned with the aerobic or oxidative recovery stage. Dog hearts were used and were prepared as Starling and open chest preparations. Oubain was administered, and at chosen times, pieces of the left ventricle were extricated, quickly immersed in liquid nitrogen and then analyzed for different forms of phosphate, that is free P, P of phosphocreatine and the P of ATP. The chosen times were:

1. at the first sign of a positive inotropic effect.

at the first sign of ventricular irritability.

at onset of ventricular tachycardia.
 at onset of ventricular fibrillation.

Muscle was also taken and incubated with a measured amount of oxygen with and without digitalis to quantitate the influence of the glycoside on the phosphorylization of creatine as measured by the uptake with a glycosidic bath and it was concluded that the synthesis of high energy phosphate bonds is not influenced by the glycoside. The former experiments yielded results showing that poisoning the heart brought about a decrease in the concentration of phosphocreatine while the ATP concentration remained unchanged. There was no change in the concentration of high energy phosphate when the action of the glycoside was solely inotropic. The

decreased phosphocreatine was not secondary to an increased heart rate as demonstrated by analysis of phosphocreatine after electrical stimulation of the heart beat; there was no decrease.

It is, therefore, concluded that the decrease in phosphocreatine is a specific effect of the glycoside. Up to this point, knowledge has been gained only of the relative rates of breakdown and synthesis of the high energy bonds, but exact knowledge of whether the rates are decreased, increased or unchanged, is not forthcoming from the experimental data thus far. It can only be said that in the non-toxic stage the biochemical synthesis and breakdown of high energy phosphate kept pace. But valid deductions can be made which are aided by work to be mentioned later. We know ATP is the primary high energy phosphate donor and phosphocreatine is a reservoir donor. Therefore, any lag in the synthesis of the phosphate bonds of ATP, relative to their rate of breakdown, will be compensated for by transfer of those bonds from phosphocreatine and phosphocreatine will decrease in concentration before there is a decrease in ATP. So either a slowing of high energy phosphate synthesis or an acceleration of its breakdown could be the mechanism for the decreased concentration of phosphocreatine in the heart made toxic with glycoside. The synthesis might be slowed if it were true that the oxidative metabolism of the heart were interfered with by toxic amounts of glycoside. Evidence exists that such is not the case.20 Likewise, evidence has already been mentioned to show that oxidative phosphorylation is not interfered with or increased by the glycoside in toxic amounts. Therefore, a logical conclusion is that the decrease in phos-

phocreatine is due to an increaseed rate of dephosphorylation of ATP which is not compensated for by an increase in the rate of synthesis. We now proceed further to work which converts the logical hypothesis above to experimental fact. We have just finished utilizing the results of analysis on toxic hearts to explain a mechanism of glycoside action on hearts properly digitalized, and certainly a valid objection could be raised. Work to be cited now will likewise suggest the analogy to be fair and experimentally sound. This experiment was performed with the idea in mind to prove that in the therapeutic range the glycoside does cause an increase in breakdown of high energy phosphate. It will be recalled that in the previous experiment there was no change in the concentration of high energy phosphate if the glycoside effect was therapeutic and it was postulated that synthesis simply kept pace with breakdown.

Dinitrophenol is a metabolic poison which prevents oxidative processes from coupling with nucleotide; that is, it prevents high energy bond formation in the face of normal oxidative metabolism. Using guinea pig hearts, Wollenberger27 was able to show that the positive inotropic effect of oubain was effectively blocked by DNP, and in these hearts, there was a severe depletion of phosphocreatine. Likewise, in hearts poisoned with DNP, oubain in concentration that alone is not toxic caused such severe depletion of high energy phosphate that contracture developed. It is most likely that acceleration of dephosphorylation of ATP caused this phenomenon and this work stands as evidence for the fact that the glycoside increases the turnover rate of ATP. But much is left still to speculation. The

question remains as to how the glycoside brings this about. Many investigators suggest that the glycoside is a stimulus to the myosin ATP-ase action. Others contest this. Then, too, how does increased dephosphorylation bring about greater force of contraction? The available high energy phosphate bond has yet to react with myosin and actin and greater dephosphorylation is not synonymous with greater utilization by the contractile system. In reference to this last point, some recent work has bearing. Bing and Taeschler28 have extracted dog ventricle in such a manner that it will only contract upon addition of ATP. They found that within a certain range of isometric tension, the work performed by strips of ventricle increased with increasing ATP concentration. Here then is work which suggests that perhaps the greater turnover of high energy phosphate afforded by glycosidic action can influence work performance. It may be, of course, that we are putting the cart before the horse and that increased dephosphorylation is not a primary phenomenon, but a secondary one. and a reflection of glycosidic action on the contractile elements themselves causing greater reactivity of the contractile elements with ATP. Unless one assumes that the drug improves phosphorylation, and experimental data do not bear that out, then the increase in mechanical efficiency can only be a reflection of a more efficient utilization of ATP and or a direct effect on the contractile system. We will return to a consideration of the latter hypothesis in short order.

At this point, I wish to cite further work of metabolic nature which helps to confirm the hypothesis set up by Wollenberger. It likewise adds more weight to the viewpoint we have de-

veloped here as to the probable site of action of the glycoside. Ellis,20 by using metabolic inhibitors, sought to demonstrate the fact that the energy yielding and not the productive pathways are essential for the positive inotropic effect of the glycosides. If aerobic metabolism was blocked by immersing the experimental heart in a nitrogen atmosphere, as long as glucose was supplied a normal inotropic effect was attained. In this case, energy metabolism is limited to the initial Embden Meverhof cycle of energy production. If sodium fluoroacetate was used, a loss of positive inotropic effect took place which was again regained with exogenously administered glucose. Fluoroacetate makes citrate accumulate through blockade of the Krebs cycle and energy production is dependent on anaerobic metabolism. If the glycolytic processes of the Embden Meyerhof cycle are blocked by addition of iodo-acetamide energy metabolism depends on metabolism of fat and protein whose degradation products are shunted through the Krebs cycle. As long as oxygen is supplied a positive inotropic effect is attained. If DNP was used, a positive inotropic effect could not be obtained. The philosophy of the obvious conclusion here is that in analyzing the metabolic needs of the action of an agent, that agent will not produce its usual effect if that area of metabolism through which the agent produces its major effect is blocked. So again the need of high energy phosphate bonds for the action of the glycoside is demonstrated, and inasmuch as oxidative metabolism, the Krebs cycle or the Embden Meverhof chain is not necessary it appears that utilization of high energy phosphate is the phase upon which it works. Of course, the possibility also remains that the action is directly on the contractile system,

The Contractile Elements I have mentioned already the great possibility that the glycoside affects directly the contractile elements themselves. This possibility stems not only from the negative evidence presented so far which relegates the action to near or upon the actin and myosin molecules, but from very positive evidence which is growing every day. Once again in medicine the protein chemist is becoming the protagonist. Much of the current study on the cause of congestive heart failure is centered on protein analysis of myocardial tissue. Olson³⁰ has recently produced some extremely stimulating results. In experiments with dogs who had gone into congestive failure over an extended period of time because of surgically induced tricuspid and pulmonary valvular lesions, some remarkable differences were found to exist in the extracted myosin from these ventricles as compared with the normal. Olson emphasizes the fact that analyses of this sort are the beginning of a fresh approach to heart failure. Very little work has been done thus far with cardiac myosin. The myosin of these ventricles that failed demonstrated many physical properties which suggest strongly the fact that the molecule is changed.

By analysis of sedimentation constants, viscosity constants and light scattering properties this myosin gave evidence of having portioned itself into different components both of which possessed molecular weights far greater than that found in the normal ventricles. This approach is yet in its infancy, but will, no doubt, be a major road taken by many in their search for the ultimate fault in failure. Clarification of such fault will in turn shed more light on the fundamental effects of digitalis.

Even before Olson's suggestive work experimental data had been presented31, 32, 33 dealing with glycosidic effects directly on the contractile proteins. Actomyosin can be extracted from muscle so that a film of the contractile matter overlays a solution. This film in turn can be compressed into threads which can be made to lift weights. These threads have been shown to behave according to Starling's Law regarding work and diastolic length. They have also been shown to be capable of greater work under the influence of a glycosidic bath. Likewise, cardiac actin has been isolated and its properties under glycosidic influence studied. Data of such studies suggest that the polymerization of actin is enhanced by the glycoside. You will recall that a prerequisite of the contractile process is the polymerization of actin. Likewise, Olson intimates that as yet uncompleted work suggests that there may be a direct glycosidic effect on the abnormal myosin in that depolymerization of the molecule is enhanced and more normal state of affairs brought about in the contractile elements.

Yet more hypotheses exist as to the site of glycosidic action, all of them with sound experimental data as their foundation. The problem for the individual attempting to extract a composite and coordinated picture of this field of research is that much argument rages over methodology. So much of this work deals with substances of such labile nature that the chemical analyses so critical in measuring them have undergone various modifications in the hands of different investigators. Needless to say, each likes his own. I will mention

one conflicting experiment because the author suggests from the results another mechanism of glycosidic action.

You will recall that Wollenberger's work showed no change in the total content of high energy phosphate, adenosine and other essentials of the contractile process. Greiner 24 disputes such results.

He stimulated cat papillary muscle at chosen times. He found a decrease in ATP and total adenosine nucleotide in hypodynamic muscle. A normal concentration of phosphocreatine was found. The muscles, treated with oubain, manifested a normal or very near normal concentration of these elements. The normal concentration of phosphocreatine suggests that there existed no failure in high energy phosphate bond generation. But the author draws attention to the decreased ATP. Since the terminal phosphate bond of ATP is specific in that neither ADP or phosphocreatine can substitute for it, the normal values for phosphocreatine in the face of decreased ATP suggest a

defect concerned with adenosine nucleotide. He suggests that in the hypodynamic muscle, the total adenosine falls so that a specific lack of compound capable of transmitting the high energy phosphate exists. Production of it remains normal. Further studies suggest a specific defect in purine-ribose metabolism, which may be righted by glycoside. It may be on the cell membrane halting diffusion of nucleotide, or more likely on nucleotide metabolism bringing about a higher concentration of the essential element. Reasons for favoring the latter theory came from two sources.

Snellman, ³⁵ in extracting cardiac contractile elements, has found (as have many others) a deaminase in cardiac muscle which converts nucleotides to lower stage compounds. His work manifests an inhibition of this enzyme. Other workers in experiments with adenosine nucleotide itself have had results which suggest to them an inhibitory influence of the glycoside on cardiac deaminase. ³⁶

Summary

I have attempted to review here the most reliable and most referred to work, dealing with the mode of action of the glycoside. Much speculation exists, to be sure, but as yet, no conclusions have been reached. But certain conclusions can be taken away from work thus far. The defect in chronic failure seems to exist in those processes involved in the passive systolic phase and not in the active oxidative stage of diastole. As to

the exact site, no one is sure at this point. It may be a defect in ATP metabolism, or utilization, or a fault attributable directly to the contractile proteins. The glycoside reverses the declining slope of mechanical efficiency. One would guess that whatever the fault in failure, it is there that the glycoside exerts its beneficial effect. Therefore, the attack on this question rests mainly with those attempting to uncover the intricacies

of failure. It seems likely as has been mentioned that the protein chemist and the biophysiologist interested in muscular contraction will be the ones to give us our answers.

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WANT A CHUCKLE? SEE

"OFF THE RECORD . . . "

HARE a light moment or two with readers who have contributed stories of humorous or unusual happenings in their practice. Pages 17a and 21a.



GEORGE ALEXANDER FRIEDMAN, M.D., LL.B., LL.M.

The Hippocratic Oath "What I may see or hear in the course of the treatment or even outside of the treatment in regard to the life of man, which on no account one must spread abroad, I will keep to myself holding such things shameful to be spoken about."

Physicians and surgeons are required by the ethics of their profession to preserve the secrets of their patients which have been communicated to them or learned from the inspection of symptoms and other bodily conditions. How far is this ethical requirement enforced by law? Statutory Physician-Patient

Privilege At common law there was no legal check upon the revelation of medical secrets. Seventeen states still retain the common law, and in those states a doctor must tell all he knows on the witness stand, at all events.² The remaining states have adopted statutes which provide that unless the patient consents, the doctor is not allowed, while testifying in court, "to disclose any information which he acquired in attending a patient in a professional capacity and which was necessary to enable him to act in that capacity." ³ The privilege of confidential communi-

New York, New York

cations is a testimonial statutory privilege. No state has made disclosure of confidence a crime, but in some the license to practice may be revoked for this cause.

Under French law, on the contrary, the physician is forbidden to reveal "all facts secret by nature" which he learned in a professional capacity. This rule concerning professional secrets is criminally enforced in France under Article 378 of the Penal Code.

Under the U.S. statutes four conditions must prevail before the patient-physician privilege can be asserted as a bar to disclosure in a legal action: (1) a licensed physician; (2) a physician-patient relationship must exist; (3) the information must have been acquired through such relationship; (4) the communication or information must have been "necessary" to the treatment of the patient. The privilege belongs to the patient, and if the patient waives it the physician can no longer assert it.

When all these conditions exist, and the privilege is not waived, the physician may testify only that he is a physician and that he treated patient.

Requisite of a Licensed Physician The privilege has been narrowly confined. While a few states include nurses and medical assistants within the privilege, the privilege has been held inapplicable to dentists, druggists, chiropractors, medical students, and Christian Science practitioners.

In fact in some states it is even questionable whether the privilege applies to psychiatrists or psychologists since several statutes are expressly inapplicable to the treatment of mental and emotional disorders. But conversely in an Illinois case the trial judge ruled that Dr. Grinker, a psychiatrist, was not re-

quired to testify to matters told to him in professional confidence by his patient, even though there was no Illinois statute providing such a privilege. The court felt that greater reason for the physician-patient privilege existed in psychiatric cases than in other medical cases.⁵

Prerequisites of Existence of Professional Relationship and Acquisition of Information Through Such Relationship In a New York case a physician was called by a hotel to attend a guest without the latter's knowledge. The man said he had taken rat poison, but did not desire medical attendance. In fact he cursed the doctor and told him to leave. The doctor however administered a hypodermic. The hotel guest was held to be a patient, although he did not want to be, and the doctor was forbidden to tell about the poison in order to show that the patient had forfeited his life insurance by committing suicide.6

In a probate action contestants claimed testatrix did not possess testamentary capacity to execute a will. One of the witnesses who testified to her mental capacity was a physician who had treated her for a broken hip five months prior to the execution of the will. His testimony was drawn only from his social contact with testatrix after their professional relationship ended. He was not her regular physician, and did not attend her in a professional capacity during that fivemonth interval. The physician's testimony was admissible in the probate proceedings.7

The professional relationship exists even if a person is unaware that he is receiving aid, as when he is unconscious or intoxicated, so long as the physician in fact rendered aid. In an Indiana case plaintiff was taken to a hospital after being ejected from one of defendant's railroad trains. He was placed in an emergency ward and prepared to undergo surgical treatment. The physician who subsequently operated on him was incompetent to testify on behalf of defendant that plaintiff was intoxicated despite the fact that he formed this opinion by observing plaintiff prior to notification that he was to perform the operation.⁸

The professional relationship does not arise where the physician examines the patient with a view not to treatment but for some other purpose. In a recent California case one James Hession brought an action for personal injuries against San Francisco and the Western Pacific Railroad Company. He alleged that he suffered brain concussion, nerve root damage, and nervous shock. At the request of Hession's attorneys a physician specializing in nervous and mental diseases twice gave Hession a neurological and psychiatric examination. The court held that the physician-patient relationship did not exist.9

Four homicides were committed by a man who set up a defense of insanity. A physician appointed by the court to examine him testified that in his opinion the man was sane. The defendant's contention that the professional opinion should not have been disclosed was rejected: the professional relationship between physician and patient did not exist.¹⁰

The law of France is similar. There the physician acting as an expert witness is *ipso jure* exempt from the rule concering professional secrets with respect to all the facts, secret or not, of the particular case in which he is act-

ing as such. He is, however, duty bound to disclose his official capacity to the patient before proceeding with his examination.¹¹

If a physician is called to a house to see one person, he can tell what he incidentally observed as to the health of other members of the family.

Prerequisite That Information Received Must Be Necessary to The Treatment Matters which are entirely distinct from medical facts may be disclosed by the physician upon the witness stand. In an Indiana case a physician was called to attend a sick wife, and examine her husband at the same time. While leaving the house, he heard the husband say, "I will get her yet, damn her; I will get her yet." Shortly afterwards the wife shot her husband. When tried for murder she called the doctor as a witness to support her story that she killed her husband in self-defense while he was approaching her with an open knife in his hand. The court held that the physician should be allowed to testify about threats of death even though he was in the house in the capacity of a physician.12

Often the illness and another fact are so closely connected that it is difficult to determine whether the information given to the physician is "necessary" to the treatment. In a New York divorce trial a physician was asked to disclose a communication from the wife as to the paternity of an expected child. The referee excluded this communication, because it must have been given as a sequel to the wife's disclosure of her pregnancy, which was clearly privileged and could not be repeated.13 But in a California case a doctor was permitted to testify that while he was delivering an illegitimate child, a certain man was

present who admitted he was the father. 14 In one case where the physician admitted he could not disassociate the necessary from the unnecessary, the information was held privileged. 15

One unusual case held that privileged communications included the way in which the injuries occurred since the facts were elicited for the purpose of determining the patient's condition. In that case the physician was prevented from testifying that the patient told him his injuries occurred when he fell out of bed rather than at work as he claimed at the trial. Furthermore, the physician was not allowed to testify that the patient refused to consent to an operation to mend his broken arm, but requested the doctor to amputate instead so that he might obtain greater compensation for his injury.10

Waiver of the Privilege A Mr. Terier fell from the steps of his house and struck his shoulder. He was treated for the injury by Dr. Dare. Terier thereupon sued Dare for malpractice for improper treatment of a dislocated shoulder. At the trial the court excluded the physician's evidence that he had treated plaintiff for a considerable time before the injury for a chronic infectious disease; that it was the physician's theory that the shoulder was not dislocated, but bruised; that infection from the contagious disease attacked the shoulder joint following the bruise, and that he treated plaintiff accordingly and fully informed him of his condition. The appellate court held that although the nature of the disease for which defendant treated plaintiff was a privileged communication, the privilege was waived by the patient by the institution of the malpractice action. It was evident to the upper court that the defend-



ant could not show by experts to what extent the condition of plaintiff might be due to a chronic disease unless he was able to show what the disease was. The defendant was permitted to show any facts he knew bearing on the present condition of plaintiff.¹⁷

In a case where a husband sued a physician for performing an abortion on his wife, seriously injuring her health, the wife refused to waive the privilege. The court held that the physician could testify to the facts to prevent injustice from being done.¹⁸

The privilege belongs to the patient, and if he does not claim it, it is waived. It may not be used to protect the physician or a third party. In a New York case plaintiff sued a health resort hotel for placing him in a room with a tubercular person causing him to contract the disease. With the consent of the tubercular room-mate, plaintiff sought to examine physician of the tubercular person on the witness stand, and require lefendant to produce the medical record

of the tubercular person. Defendant objected on the grounds that this would involve disclosure of privileged communications between physician and patient. The court held that where the patient waives his right to secrecy, the physician or third person cannot object.¹⁹

In most jurisdictions the privilege of secrecy may be waived by the patient's personal representative after the patient's death. And in criminal cases the weight of authority supports the view that the defendant in a criminal prosecution cannot object to the testimony of the physician of the victim.

Provisions for waiver of the privilege contained in many insurance policies are valid and binding upon those claiming any interest in the policy in most jurisdictions.²⁰

The Insurance Company Doctor Mary E. Lamere applied for life insurance to the Prudential Life Insurance Company. Dr. Zeh examined her in the interest of the Prudential and recommended that her application for insurance be rejected, Mrs. Lamere then successfully applied to the Germania Life Insurance Company. In a suit on the policy defendant Germania Life Insurance Company attempted to interrogate Dr. Zeh to show the state of health of Mrs. Lamere. The appellate court held that he was a competent witness since the information he was asked to give was not acquired by him while attending a patient. The object of the examination was not treatment, but to acquire information for the benefit of the company, albeit a different company from the one on trial. Had Dr. Zeh gone further and treated Mrs. Lamere all the information already received would have been privileged.

The French law regarding the physician employed by an insurance company is similar. The physician employed by an insurance company and acting as agent for such company is not exempted by operation of law from the rule concerning professional secrets as is the expert witness. He may however, reveal facts secrets by nature to his employer or to a court, provided (a) that he acquired knowledge of such facts in his official capacity (and not in the course of his private practice, if he has one); (b) that the patient knew, at the time of the examination, that the physician was conducting it as agent for the company; and (c) that the patient consented, expressedly or impliedly, to his examination under such circumstances. 22

American and French law are similar with respect to physicians hired by a third party. If the purpose of the examination is to gain information for the hiring party, the information thus gained is not confidential. But if, for example, a business company's physician treats an employee for injuries sustained during the employment, a confidential relationship between doctor and patient arises and the patient is protected by the privilege.

The Physician's Duty of Disclosure The doctor is under a legal duty to disclose certain information to the proper authorities, regardless of his ethical duty of non-disclosure. Communicable diseases must be reported to public health authorities. In many states the physician is required to report various other maladies which while serious and dangerous to the persons afflicted are not necessarily dangerous to the public at large. Cerebral palsy, infants' eye diseases, premature births, congenital defects, blindness, epilepsy,

drug addicts and malignant tumors are some instances.

The physician who fails to make reports required by law may subject himself to criminal prosecution, the penalty of which, if he is found guilty, is fine or imprisonment or both. One physician was fined by the court for his failure to report to the police a prostitute afflicted with a venereal disease. addition, he was deprived of his license to practice by the Board of Medical Examiners of his state.23 Another physician attempted to excuse his delinquence in filing a report about a consumptive patient by claiming the physician-patient privilege. The court held that the privilege did not apply in such cases, and the doctor was fined accordingly.24

The physician, as a citizen, has a duty to report any information concerning a crime of which he has knowledge. In addition, in many states the physician is required to report all cases of bullet or knife wounds to the police. The conflict of loyalties is often perplexing to the doctor. Dillinger, while Public Enemy No. 1, was fleeing from prison. He went to Doctor C. E. May of Minnesota to be treated for gunshot wounds incurred during his escape. Dr. May placed his ethical duty higher than his legal duty and did not disclose his ministrations to the police. He was consequently imprisoned for two years and fined \$1000 for harboring a fugitive wanted under a federal warrant.25

In a New York case defendant was charged with shooting a woman with intent to kill. She did not die. The court admitted the testimony of the doctor who extracted the bullet from her body, although there was no evidence that the woman waived her privilege. The court noted the New York Penal Law requiring a physician to report all cases of bullet wounds to the police. It said further that the disclosure was not one which would subject the woman to prosecution, damage her reputation, or injure her feelings.²⁶

Only a few states have statutes requiring a physician to report cases of criminal abortion to the police. Once the victim of the abortion is dead, however, the privilege does not operate to protect the defendant in a criminal action. In an lowa case defendant was prosecuted for performing an abortion which resulted in death. The physician who treated the woman after the abortion was permitted to testify.²⁷

It follows that the physician who is required by law to disclose confidential information is not liable in a civil suit by the patient on that disclosure.

Civil Liability for Disclosure of Confidential Information No state has made disclosure of the intimate secrets of a patient a crime. While in some states the physician's license may be suspended or revoked upon these grounds,25 no case has been found in which the license was suspended or revoked. In California the Board of Medical Examiners attempted to revoke the license of a physician for disclosing information about his patients in letters to his girl friend. The California Medical Practice Act declares that "unprofessional conduct" meant "willful betraying of a professional secret." The court held that "the act was never designed or intended to seal the lips of a physician against any and all disclosures, irrespective of their harmless character. "29

No statute requires the physician to pay damages to his patient for disclosure of confidential information. In fact, apart from a libel action, in which truth is a complete defense, the law affords little protection to a patient for disclosure of confidential information. For the most part, the patient's confidences are protected against disclosure outside the courtroom by the code of professional ethics rather than by law.

The physician is protected from liability to a patient for damages resulting from disclosures when he testifies under legal compulsion in a civil suit. A physician, under threat of a contempt citation, testified against his patient in an insurance suit. He was sued by the patient for loss of insurance benefits. The physician was held justified in giving the information.²⁰

In one case the court gratuitously asserted, without finding it necessary to so hold, that a patient could maintain an action against a physician for wrongfully divulging confidential communications. The legal basis for this, the judge claimed, was that for so palpable a wrong, the law provides a remedy.³¹ But only two cases have arisen which

indicate that civil actions can be maintained against physicians for extrajudicial disclosure. Both these cases arose in states with statutory prohibitions against such disclosure.

In the case of Simonsen v. Swenson, 32 a guest of a small hotel in a Nebraska town consulted a doctor who diagnosed his ailment as syphilis. He told the patient of the danger of communication and got his promise to leave the hotel the next day. On that day the doctor made a professional call on the owner of the hotel, and on finding that the patient had not moved out he warned the owner that the man had a "contagious disease." The patient was forced to leave the hotel. He received a negative result in a Wassermann test made by another physician and sued the doctor for disclosing medical secrets. The court, while assuming such an action would lie for breach of "unprofessional conduct" under the statute, held that in this case the circumstances warranted the disclosure.

In the second case the defendant Blaisdell was the superintendent of one of the state's mental hospitals. The Mental Hygiene Law of New York makes all case records of the hospital confidential and privileged except in specified circumstances, Plaintiff alleged

> defendant breached this law when, by letter, addressed to another defendant, Carp, he enclosed plaintiff's hospital record. The court held the action would lie.²³

No case has been found, however, indicating that a tort action would lie in a state where there is no statutory duty against disclosure, or a contract action for



breach of the implied condition of secrecy in the contract between physician and patient.

The law on the subject is far from clear, except in legal proceedings the strongest protection of a patient's confidence is medical ethics. Disclosure or non-disclosure is decided by the individual physician—but what he discloses he does at his own peril.

Summary

 At common law there was no legal check upon the revelation of medical secrets.

2. Statutory law in more than half of the United States protects the physician-patient privilege in the courtroom. Four conditions must prevail:

- (1) a licensed physician:
- (2) a physician-patient relationship;
- the information must have been acquired through such relationship;
- (4) the information must have been "necessary" to treatment.

 A licensed psychiatrist is within the privilege in some, but not all, jurisdictions.

 A person can be a patient unwillingly or unknowingly to receive the protection of the privilege.

5. The physician-patient relationship does not exist where the physician examines a person not for treatment but for some other purpose. Examples are the court appointed medical expert, and the insurance company doctor. If treatment is rendered, however, the relationship arises.

6. The privilege belongs to the

patient, and exists for his protection. It can be waived by him or his personal representatives after his death. Institution of a trial against a physician treating him constitutes waiver.

 The privilege may not be used to protect the physician himself or a third party, especially in a criminal action.

8. The physician's ethical and legal duty of non-disclosure sometimes conflicts with a positive duty of disclosure to the state. Certain diseases must be disclosed to health authorities. Crimes or any knowledge thereof must be reported to the police. Bullet and knife wounds must also be reported. Failure to disclose such information can result in fine or imprisonment or both, and suspension or revocation of the license to practice.

 The physician who discloses information by authority of the law is protected from liability in a civil action by the patient for such disclosure.

10. A physician who breaches the confidences of a patient may be subjected to damages in a civil action and censure by the Medical Board or suspension or revocation of his license to practice for unprofessional conduct.

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(1953).

This rule is subject to two important excep-

(1) the medical expert witness:

(2) the physician employed by an insurance or other company. These exceptions are discussed infre, pp. 5

and 9, 5. Regan, Doctor, Patient and the Law, p. 98

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The Barton Forceps

These forceps, planned for application to heads arrested in the transverse diameter of the inlet, find advantageous use in deep transverse arrest, posterior position, and face presentation. One blade is hinged to the shank, giving it flexibility over an arc of 90 degrees. The other blade has a deep cephalic curve. The blades are attached to the shanks laterally at an angle of about 50 degrees. When they are rotated over a 90-degree arc to the transverse position, the angle of attachment of the blade forms a perfect pelvic curve. There is a lock of sliding type, and a separate traction handle (Fig. 1).

Transverse positions L.O.T. and R.O.T. The hinged or anterior blade is always introduced first. By a wandering maneuver it is applied over the face or occiput until it reaches the anterior-malar-parietal region under the symphysis (Fig. 2). The hinge should be close to the sagittal suture, one finger's breadth mediad to the posterior fontanelle. The higher the head, the more important it is to insert the anterior hinged blade directly posterior.

The posterior blade is inserted directly posterior between the handle of the anterior blade and the patient's right thigh (Fig. 3). While the anterior blade is usually further up in the pelvis than the posterior, locking presents no difficulty due to the sliding lock. In locking, the handle of the posterior blade should not be depressed, the anterior hinged blade should be raised to meet it (Fig. 4).

The traction handle is attached to the shanks between the finger

From FORCEPS DELIVERIES, by Edward H, Dennen, M.D., Professor of Obstetrics and Gynecology, Director of Department and Attending Obstetrician, New York Polyclinic Medical School and Hospital. (Publisher—F. A. Davis Company, Philadelphia, Pa. \$6.50).



Figure 1

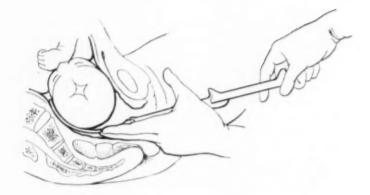


Figure 2



Figure 3

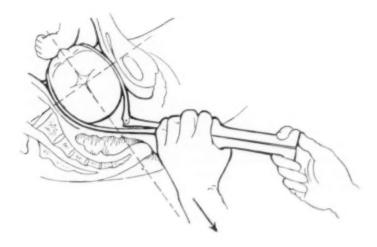


Figure 4

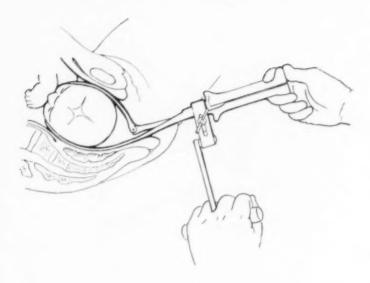


Figure 5

guard and the lock. Further traction, with the head in the transverse position, may be necessary in order to bring the head well down into the plane of greatest pelvic dimension before rotation is begun (Fig. 5). Rotation is counterclockwise for a L.O.T. presentation, and clockwise for a R.O.T. to the anterior position. The handles are rotated over a wide arc. When rotation is complete the handles are parallel to or a little below the horizontal, directed obliquely away from the midline toward the opposite side; after rotation of a L.O.T. to anterior, the handles are near the patient's right thigh, and after rotation of a R.O.T., the handles are near the left thigh.

Clinico-Pathological Conference

Mount Sinai Hospital, New York City

Prepared by Hans Popper, M.D., Director, Department of Pathology, Mount Sinai Hospital. Discussors: Coleman B. Rabin, M.D., Attending Physician for Thoracic Diseases, Associate Attending Radiologist, and Gabriel Genkins, M.D., Senior Resident in Internal Medicine. Feb 13, 1957.

DR. RABIN:

The patient was a young Negro woman who became ill six weeks before admission with evidence of progressive congestive heart failure. At the onset of her illness she noticed some shortness of breath on exertion and rapidly developed two pillow orthopnea. Three weeks before admission there occurred a brief syncopal episode followed by discomfort, and later by weakness and faintness.

There were further complaints of frontal headache, nausea, vomiting, and some paresthesia in the legs. A tumor of the uterus had been removed a year previously. The patient's mother died of hypertension and her father and one brother suffered heart disease.

Physical Examination On physical examination the patient did not appear

ill, but her pulse rate was rather rapid. It varied from 92 to 120 a minute. There was a moderate anisocoria with a sluggish reaction to light bilaterally. There were small, discrete peripheral lymph nodes palpable in various regions.

The most important part of the physical examination related to the cardiac evaluation. The apex beat was palpable. There were visible pulsations at the apex and also at the left third interspace. A systolic and diastolic thrill was present in the second and third left intercostal space. There was widening of the cardiac dullness to percussion. Loud systolic and diastolic murmurs were heard along the left sternal border from the second through the fourth interspaces, and a rough systolic murmur and a soft diastolic murmur were heard at the apex. A soft systolic murmur was audible at the pulmonic area. and this was followed by a booming second sound.

The liver edge was palpable one to two fingers below the right costal margin. There was pretibial edema and clubbing of the fingers. Urinalysis revealed a specific gravity of 1.008, and one plus albumin. The sedimentation rate was 13 millimeters in one hour. The hematocrit was elevated to 52%; the blood count was otherwise normal. Two blood cultures were negative. Her temperature was normal during the hospital course.

The electrocardiogram showed a regular sinus tachycardia and right ventricular preponderance, together with nonspecific T wave changes in the standard and precordial leads.

The P.R interval was increased and there was an S wave in lead one. Q waves were present in AVR, V_1 and V_2 . There were prominent P waves in V_1 and V_2 .

The venous pressure was markedly elevated to levels of 200 to 300 millimeters of water. Circulation time was 28 seconds and the ether time, arm to lung, was 10 seconds.

On fluoroscopic examination the apex of the heart appeared displaced to the left, and there was enlargement of the left ventricular outflow tract. In the left anterior oblique position, the left ventricle failed to clear the spine at more than 60 degrees rotation suggesting that this ventricle was enlarged. The aortic window was not well seen. There was marked prominence of the main pulmonary artery trunk.

The barium filled esophagus was not displaced, and there was a dimunition in the size of the retrosternal space.

In the hospital the patient was treated with a low salt diet and digitalis. There was given mercuhydrin, aminophyllin and phenobarbital. The apical rate increased to 140 a minute. Two days after admission, without any change in status, the patient died suddenly after a total illness of six weeks.

Films The chest x-ray film revealed an increase in the transverse diameter of the heart. The left ventricular outflow tract was enlarged, as was described. The right side of the heart had an unusual convexity and was considerably enlarged to the right. The pulmonary fields looked quite clear, particularly at the periphery, which indicates that the small vessels of the lung are narrower than they should be in the presence of heart failure. The vessels of the right root could barely be visualized through the cardiac shadow. The branches of the left pulmonary artery near the root were somewhat widened. However, the vessels in the more distal part of the lung were diminished in caliber.

The patient had three sets of murmurs. One was along the left side of the sternum in the region of the second, third and fourth spaces, systolic and diastolic in timing and associated with a systolic and diastolic thrill. There was also a systolic and diastolic murmur of lesser intensity and roughness in the region of the apex heart, and a systolic murmur in the pulmonary area with a markedly accentuated booming second sound. In this region there was felt and could be seen a systolic shock similar to the apex thrust.

The x-ray film shows quite definite enlargement of the right ventricle and prominence in the region of the pulmonary artery. The left ventricle appears enlarged, not only in the posteroanterior view, but also in the left oblique.

The general circulation time was increased as was the arm to lung time, and the venous pressure showed a very marked elevation. The entire course of this disease, as related to the patient's symptoms, was extremely rapid.

Cardiac Origin Now with the summary of the case as a background, what have we to consider? It is apparent that we are dealing with a disease that is primarily of cardiac origin; we are not dealing with an enlargement of the pulmonary artery, secondary to pulmonary disease, or disease in the pulmonary blood vessels alone. The systolic and diastolic thrill felt along the sternum, the different sets of murmurs, cannot be explained on the basis of an active pulmonic insufficiency which might result from hypertension in the pulmonary artery because of disturbance in the lungs or disturbance in the vessels of the lungs. We must consider something else.

What are the congenital diseases of the heart that might produce this picture? We had so many different murmurs here. We do not have a simple murmur in the pulmonic area. The thrill was not felt in that location as such. It was below this region and close to the sternum. So this would not fit in with patent ductus as a possible diagnosis. The pulmonary vessels through the lungs are not dilated.

We come then to the possibility of pulmonic stenosis with post stenotic dilatation associated perhaps with an abnormal communication between both sides of the heart, such as an auricular septal defect or a defect in the membranous septum. This I think is somewhat harder to exclude on the data that we have here. However, the peculiar murmurs point to some other condition, namely the Eisenmenger complex.

Septum Defect This entity consists of a defect in the membranous septum, between the ventricles, and is associated with a shunt from the left to the right resulting in an increase in the pressure in the pulmonary artery. Whether this produces a secondary increase in the width of the media of the pulmonary artery, and thus an increase in thickness of the vessels to produce elevation in the pressure on the right side of the heart, or whether there is a narrowing of these pulmonary vessels as a result of changes associated with the anomaly itself, one doesn't know. But the Eisenmenger complex, in addition to the defect in the septum itself, is associated with increased resistance to blood flow in the lungs.

In some cases this increase of blood flow may be associated with visible changes in the pulmonary field, that is, widening of the vessels.

However, often there is clarity of the peripheral two-thirds of the pulmonary fields. In this respect the change in the roentgen film of the lungs in this case would be compatible. Patients can go on for years with the Eisenmenger complex and develop cyanosis only later upon reversal of the shunt. One doesn't know whether this patient was cyanotic or not since she was not in the hospital long enough for arterial oxygen studies to be made.

Murmurs may be heard, and then, rather suddenly when the right heart fails to push the blood through the lungs, the murmur of intraventricular septal defect is heard in the place described here. A booming second sound is due to the increased pressure in the pulmonic area. The systolic and diastolic murmurs at the apex would be transmitted.

So I think, after analyzing this, we are dealing with congenital disease of the heart; and of the various types of defects. I would select Eisenmenger's

complex because of the characteristic murmur of a ventricular septal defect and the evidences of difficulty of blood flow through the lungs.

It would be interesting to hear from someone on the cardiac catheterization service. Dr. Genkins?

DR. GENKINS: This young woman had no previous history of symptoms of cardiac disability. A gynecological procedure was done in 1953 and I don't know whether a significant congenital cardiac lesion had been noticed; at least we have no mention of this. On the other hand, we do have a fairly marked and far advanced right ventricular hypertrophy as well as clubbing of the digits which indicate the long extension of this lesion.

An Eisenmenger complex cannot be ruled out. But there has been no symptomatology, and apparently this patient deteriorated very rapidly.

I can't differentiate between this and primary pulmonary hypertension in this patient. In this condition murmurs as described here have been noted, and syncopal episodes form a significant part of this symptomatology. The left ventricular enlargement would be unusual. I don't have enough facts in terms of the history to determine whether there was any symptomatology before this acute episode, or whether one must predicate something in addition which occurred very dramatically and suddenly such as ruptured valve, an infarction or other cardiac injuries which would lead to an acute, rapid deterioration.

DR. RABIN: Dr. Genkins is not satisfied with the diagnosis of congenital heart disease because of the fact that the patient underwent an operation for a condition that apparently was not

of an urgent nature. He is not clear as to why she died so suddenly and suggests we look for some other cause, possibly primary pulmonary hypertension.

Pathology

Dr. Popper: The case today presents a rather unusual pathologic picture. The basic feature, as Dr. Rabin has stressed, is the involvement of the right as well as the left heart. An autopsy of this rather obese woman, the spleen, weighing about 125 gm, was on the large side for a colored woman. Microscopically, congestion was the prominent feature. However, there was also a proliferation of the reticulo-endothelial cells indicating a reactive hyperplasia, non-specific in nature, apparently the result of an irritation.

The lymph nodes were of normal size, not enlarged, and on microscopic examination, only some hyperplasia of the follicle cells was noted. The bone marrow, by contrast, revealed an increase of vessels which were surrounded by histiocytic as well as plasmacellular elements. In addition, the eosinophiles were increased; a non-specific irritation of the bone marrow must therefore be assumed, in keeping with the splenic changes. The cortex of the kidneys was pale and the medullary portion hyperemic, as is the case in passive congestion.

The liver was enlarged, weighing 1650 gm. Its anterior edges were blunted and on the cut surface the architecture appeared exaggerated in places and in others reversed because of bridges connecting the hyperemic centro-lobular zones from which the liver cells had almost completely disappeared. In addition to these features of severe subacute congestion, focal necrosis pointed

to "toxic" or irritative features.

Myocardium The heart was distinctly enlarged and weighed 425 gm. The apex was formed by the right ventricle which, as predicted, was severely hypertrophic but also dilated. The same held true for the right atrium. The left chamber exhibited dilatation and the left atrium was small.

Looking at the valves and the septum, I have to prepare you for a disappointment: There was no septal defect.

The mitral valve was irregularly thickened because of edema; histologically, histocytic cells accumulated around thin vessels suggesting a non-specific reaction. The aortic valve as well as those in the right heart were entirely normal. The pulmonary artery exhibited considerable arteriosclerosis.

The significant dilatation of both chambers aroused our interest in the myocardium where we found inflammatory cells, mainly of the mononuclear type, in the interstitial tissue. Occasionally they replaced necrotic muscle fibers and this was associated with focal hypertrophy of myocardial fibers. In places, formidable granulomas were seen.

We are therefore dealing with a diffuse non-specific myocarditis of unknown ethiology, apparently not on a simple anoxic basis in view of the small numbers of segmented leukocytes. Also below the mural endocardium, inflammatory cells accumulated in small foci.

Reviewing the configuration of the heart, the assumption of a cor pulmonale appears justified, which is somehow distorted by the myocarditis.

This diagnosis which correlates with the clinical observation directs our interest toward the lung.

Pulmonary Inspection The gross

picture of the lungs, however, was again disappointing. They were fluffy and air-containing throughout. The pleura was normal. Microscopically some hyperemia, hemorrhage and edema was noted, again non-specific, and in part terminal manifestation. Only at closer inspection were a few arteries shown to be distinctly thickened. media of some of the smaller branches of the pulmonary artery was greatly broadened and mitosis of the muscle cells were recognized. This is probably a response to pulmonary hypertension rather than a primary pulmonary sclerosis.

Other vessels, especially larger ones, were entirely normal, whereas some scattered small arteries appeared entirely obstructed by a vascular tissue which on first view appeared granulomatous in nature. Sometimes a small arterial lumen was eccentrically located. This aroused the suspicion of a foreign body reaction as one may see it around schistosoma ova in Egyptian and less frequently in Puerto Rican schistosomiasis Mansoni. However, no eggs were noted and the "granulomas" consisted of cells with vacuolized, fatcontaining cytoplasm arranged around tortuous capillaries and containing foci of fibrinoid degeneration. These bodies, therefore, rather resembled a glomus and seemed to obstruct small arteries. Serial section indicated that they were mainly located where small arteries forked off from larger vessels which were not involved themselves. Beyond this area of obstruction the vessel was extremely dilated and was therefore considered as a vein.

Vascular Obstruction Similar pictures have previously been described in children or adults who had died with

severe pulmonary hypertension, ostensibly produced by these vascular obstructions. It had been believed that the glomus-like bodies represented changes in normally existing arteriovenous anastomoses in the lung.

Chiari and Kucsko had assumed that such anastomes are required for normal pulmonary hemodynamics and concluded that their obstruction produced

pulmonary hypertension.

Recently, Rutishauser has demonstrated in three-dimensional reconstructions that the wide "poststenotic" portion of the vessel is a small pulmonary artery, dilated apparently because of anastomoses with neighboring branches of the bronchial artery.

It appears therefore that the lesion is not located at an arterio-venous anastomosis but rather represents an obstruction in the arterial tree at the bifurcation of a larger vessel.

However, serial sections show that the wide capillaries in these foci communicate with pulmonary veins and the lesion therefore represents not an obstruction of a normally existing anastomosis but rather facilitates an abnormal arterio-venous shunt, which was anatomically reflected in our case in a fairly severe sclerosis of the pulmonary vein branches.

The nature of these obstructions for which the name of pulmonary obliterating endofibrosis has been coined and which seems to be regularly associated with the clinical picture of speedily developing pulmonary hypertension (as in our case), remains obscure.

In some of the few cases reported in the literature, other causes for pulmonary hypertension existed, such as septal defects; however, in our patient just like others in the literature, no such features were found, and the pulmonary endofibrosis is apparently the cause and not the result of the hypertension.

In the glomus-like bodies, anthracotic pigments and fat were demonstrated which possibly may mark or tag an irritating material which is histologically not visible. This material may have been transported together with the pigment which latter could be traced from the alveoli through the pulmonary capillaries to the peribronchial area and from here to the bifurcation of the pulmonary arteries. This hypothetical irritating material would possibly explain the non-specific changes observed in myocardium, liver, spleen, bone marrow and lymph nodes.

This case thus represents a pulmonary arteriosclerosis with fairly acute pulmonary hypertension. Pulmonary arteriosclerosis may be secondary to pulmonary hypertension (as caused by mitral stenosis or septal defect) or be a reflection of general arteriosclerosis. It may be also caused by organization of emboli, interstitial pneumonitis, congenital defects of pulmonary vessels, intravascular neurofibromatosis or toxic. infectious or allergic factors. The latter might possibly be assumed in our case to produce a segmental arterial lesion.

Attempting a clinical - pathological correlation, the segmental pulmonary eclerosis produced cor pulmonale which six weeks before death led to the manifestations of cardiac failure reflected in an exertional dyspnoe cough, fainting spells, high venous and pulse pressure, hepatomegaly and albuminuria. The complicating myocarditis caused the murmurs and the diffuse cardiac dilation and resulted in death.

Unreliability of Murmurs

Dr. Rabin: Dr. Popper has described the pathology of the pulmonary vessels responsible for the pulmonary hypertension in this case. I find cases where we are wrong most interesting and constructive.

Dr. Genkins felt that our analysis was a little off side. He felt that we might very well be dealing here with a case of primary pulmonary hypertension by which he means a disease with obstruction primarily in the blood vessels of the lung without any other disease. We were led astray here because of the presence of what seems to be characteristic murmurs, and the presence of a thrill felt over the precordium which one should not usually hear or feel in case of primary pulmonary hyperten-I feel this case illustrates for us the unreliability of murmurs in the diagnosis of certain forms of cardiac disease and particularly in congenital Here one has to rely upon other factors and examinations, particularly cardiac catheterization and angiocardiography. The possibility of intraventricular septal defect could thus be excluded. With such information one could disregard the murmurs, which I did not choose to disregard in illuminating these possibilities.

There remain, however, several things to be explained. One, of course, is the nature of the disease. As for the possibility of some sort of allergic background in this case, I would say first that the rash described is an acne form rash. This is not evidence of allergy. The only clue we have is that in some of the tissues, on some of the sections eosinophilla was noted. This of course is totally insufficient to justify a jump into the miasma of allergy to explain a disease whose nature we do not know.

One should consider a relationship between the inflammatory lesions found in the spleen, bone marrow, kidneys and heart muscle to the lesions causing obstruction in the arterial branches. One should study other cases of anastomositis of the lungs to determine whether there were similar widespread inflammatory changes. Now if these should be found, one could conclude that they are an integral part of the disease.

One could then decide that this is a generalized disease and that the lesions in the pumonary arteries are but one aspect.

The enlargement of both ventricles proved a stumbling block in the diagnosis. One would not expect enlargement of both chambers of the heart in a disease characterized only by obstruction of the pulmonary arteries.

The diffuse myocarditis which caused the generalized dilation of the heart, not only made the diagnosis difficult, but also was undoubtedly responsible for the rapidly progressing heart failure, and the sudden death of the patient.

Tetanus

Tetanus, or "Lockjaw," is a relatively rare disease in this country today, largely because of a vigorous immunization program. However, tetanus bacilli have a widespread distribution, and the disease is an ever-present danger which must not be overlooked.

Etiology and Pathogenesis Clostridium tetani is a slender, slightly motile, spore-forming, anaerobic bacillus, which carries its single spore at one end, giving the typical squash-racquet appearance. It perpetuates itself outside, as well as inside the body. Spores can be found in the earth, in manure, in putrefying liquids, in the intestines of ruminants and horses, and in the stools of about one out of every four humans, to mention only a few locations. The spores are resistant to the usual bactericidal measures, autoclaving at 15 pounds pressure for 20 minutes (121° C.) being required for their destruction. The organism is sensitive to penicillin both in vitro and in vivo.

The disease is caused by the action of the toxin produced by the bacillus—the most potent water-soluble poison known to man. It was formerly believed that the toxin travelled to the central nervous system via the peripheral nerves. However, Abel has shown that transportation is via the blood stream. Upon reaching the central nervous system, the toxin is modified to form a new toxin, which then becomes fixed within the cells, and

there produces its deleterious effects. Before fixation, the toxin can be neutralized by antitoxin, but after fixation, it is inaccessible.

The toxin also has a local action upon the neuromuscular end-organ, producing sustained contraction of the muscle, which may last for several months.

Tetanus follows the infection of a wound by Clostridium tetani. In order for the organisms to grow, however, necrotic tissue must be present, too. The presence of concomitant infection (pyogenic) and/or a foreign body favors the growth of the bacilli. The point of entry of the organisms is often obscure, e.g., the umbilicus of the newborn, fresh operative wounds of patients operated upon during dust storms, compound fractures, small puncture wounds and splinters, bee-stings, insect bites, bed sores, and hypodermic needle punctures in drug addicts (!). Large contused and lacerated wounds with considerable devitalization of tissue, especially gunshot and shell-fragment wounds are commonly contaminated by tetanus bacilli.

Prevention The best treatment of tetanus is prophylaxis. If every traumatic wound—be it laceration, incised wound, burn, puncture, gunshot or missile wound, etc.—is considered contaminated with Cl. tetani, and the patient treated accordingly, the danger of tetanus will be all but eliminated. There is some difference of opinion about the

necessity of immunizing patients with clean incised wounds. However, since Cl. tetani is almost ubiquitous in its distribution, and since with caution, serum reactions are extremely uncommon, it would appear wise to assure immunization in all cases.

Prophylaxis should include:

- 1. Adequate Surgical Care of the Wound:
- a. Thorough but gentle debridement of the wound with removal of all devitalized tissue and foreign material. In facial wounds, conservatism in debridement is advisable.
- Thorough cleansing of wound edges and surrounding skin with soap and water.
- c. Irrigation of the wound itself with copious amounts of sterile normal saline. Anesthesia (local, regional, or general) may be required for debridement and irrigation.

Puncture wounds may require incision for adequate irrigation and drainage. Cautery, an old stand-by for puncture wounds, is painful, and produces further devialization of tissue; it is mentioned only to be deprecated.

2. Prevention of growth of organisms: In dirty wounds, large wounds, punctures, animal and human bites, and in those with considerable devitalization of tissue, antibiotics are indicated. Penicillin in the dose of 300,000 to 1,000,000 U. per day (depending upon the condition of the wound and the time between injury and initial treatment) is the drug of choice.

However, in the case of a patient with a previous penicillin sensitivity reaction, another antibiotic should be substituted.

3. Prompt neutralization of any tetanus toxin that may have been formed: Two

agents are available for this—Tetanus Antitoxin and Tetanus Toxoid.

If the patient has not been previously immunized with tetanus toxoid, the antitoxin (TAT) is the drug of choice. The most readily available preparation is in horse serum; therefore a careful allergic history must be taken, and in the presence of a previous sensitivity to horse serum, or a strong allergic history, antitoxin must be used with extreme caution.

Regardless of the absence of a previous history of sensitivity, tetanus antitoxin should never be administered in a prophylactic or therapeutic dose intil a test dose has first been given. The most satisfactory test of sensitivity is an intradermal skin test. The technic is as follows: (Full-strength TAT is not used for skin testing!) 0.1 cc. of full-strength TAT is drawn up into a syringe; normal saline is then drawn up to the 1.0 cc. mark. The solutions are mixed by shaking: this produces 1.0 cc. of a 1:10 dilution of the antitoxin. Next, 0.1 cc. of this 1:10 dilution is injected intradermally into the skin of the forearm. Into the skin of the other forearm, 0.1 cc. of normal saline is injected as a control. Each joint of injection is circled with ink, and marked "TAT" or "NS." respectively (Figure 1). In 30 minutes the test is read; it is negative if there is no more reaction at the site of TAT injection than there is at the site of saline injection (Figure 2). A full prophylactic dose of tetanus, antitoxin is then given subcutaneously. This is 1500 to 3000 Units of TAT. The 1500 U. dose is traditional, but recent investigation favors the 3000 U. dose. Certainly for a large, grossly contaminated wound, at least 3000 U. should be given. The dose is the same for children and adults, since the number of organisms entering

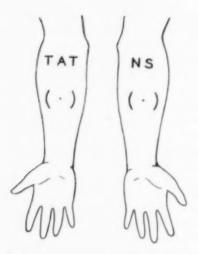


Fig. 1. Skin Test: Tetanus antitoxin (T.A.T.) in right forearm; normal saline in left forearm as control. Each site of injection marked.

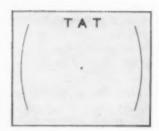
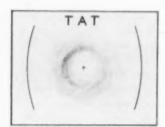


Fig. 2. Negative reaction (after 30 minutes).



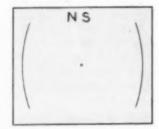
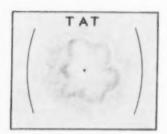


Fig. 3. Positive reaction: Wheal and erythema at site of T.A.T. injection; no reaction at saline injection site.



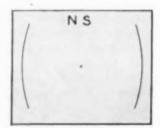


Fig. 4. Strong positive reaction: Wheal with pseudopods at T.A.T. injection site.

the wound is the important factor, not the patient's size.

If, 30 minutes after injection of the test dose, a wheal with an area of surrounding erythema is found at the TAT site, but not around the saline (Figure 3), the skin test is positive, and the patient should be desensitized. means giving the total subcutaneous prophylactic dose in divided portions, 30 minutes apart: 0.1 cc., 0.2 cc., 0.5 cc., 1 cc., 2 cc., until the total dose is administered. If a mild reaction to one of the portions is seen, the same amount is given the next time. The reaction may be treated by 0.3 cc. of 1:1000 epinephrine, S.C. If pseudopods are seen around the wheal (Figure 4), the test is strongly positive, and a slower desensitization is advisable, starting with 0.1 cc. of 1:10 dilution of the antitoxin,

Some surgeons use the ophthalmic test in preference to the skin test. This consists of placing 1 drop of 1:10 dilution of TAT in the conjunctival sac. Conjunctival congestion, lacrimation, and itching after 10 minutes signify a positive reaction. The local eye symptoms can be relieved by a drop of 1:1000 epinephrine. The ophthalmic test is not recommended.

Two types of severe serum reactions are occasionally encountered. The immediate reaction may range from mere fainting to severe sudden collapse with cyanosis, dyspnea, vomiting, and diarrhea. Treatment is 1.0 cc. Epinephrine (1:100), s.c., oxygen, artificial respiration (if needed), supportive measures, and Benadryl 50 mgm., I.V. The delayed reaction (5 to 10 days after TAT) is manifested by pruritis, urticaria, lymph node enlargement, arthralgia, edema, and fever. Treatment consists of sedation and antihistaminics.

If the patient is seen first 2 to 3 days after injury, the initial dose of TAT should be 10,000 to 20,000 U. Tetanus antitoxin produces a prompt passive immunity, but one which lasts only 7 to 10 days. If any further surgical procedure is to be done on the wound after that period, another dose of TAT should be given—but only after another skin test! Preparations of antitoxin in sheep and other sera are also available, and may be used in patients strongly sensitive to horse serum.

Active immunization with Alumprecipitated Tetanus Toxoid is more lasting, but a longer period is required for the development of the immunity. Everyone should be immunized with toxoid and have his immunity maintained by periodic booster shots! Since the toxoid contains no serum, sensitivity reactions are extremely rare. No skin testing is necessary. Immunization is produced by three doses of 0.5 to 1.0 cc. toxoid (depending upon the preparation used), S.C., or I.M., with an interval of 4 to 6 weeks between doses. Immunity following the full course lasts probably up to 5 years or more but booster dose of 0.5 cc. to 1.0 cc. (depending upon the preparation used-see the brochure accompanying the vial) are advisable every 2 years, and at the time of any traumatic wounding or surgery upon a previous traumatic wound (especially one containing foreign bodies).

If the patient has been actively immunized with toxoid and has kept up his immunity with boosters, only another toxoid booster need be given at the time he is seen for treatment of a traumatic wound, but the other measures of cleansing, debridement, and antibiotics are also essential.

When a non-immunized patient is seen

for a traumatic wound, passive immunization with antitoxin is essential, but active immunization should be initiated at the same time for future protection. Everyone, especially children, gardeners, blacksmiths, cattlemen, and industrial workers, should be actively immunized. Fortunately, many children are now being immunized with triple toxoid (tetanus, diphtheria, and whooping cough) early in life. It should be remembered that compulsory active immunization of members of our armed forces was responsible for the virtual elimination of tetanus as a problem of modern warfare.

The disease, Tetanus, is still common enough to warrant comment. The incubation period is usually 5 to 10 days (3 days to 3 weeks). Initial symptoms are a. trismus (stiffness of the jaws), b. restlessness and irritability, c, stiff neck, d. dysphagia. Stiffness of the arms and legs, headache, convulsions, fever, and chills are occasionally seen first. Later symptoms are: a. progressive trismus, b. risus sardonicus (from spasm of the facial muscles), c. opisthotonus, d. painful generalized convulsions produced by minor stimuli, e, marked dysphagia, f. cyanosis and asphyxia, g. increased body temperature, h. increased pulse and respiratory rates. Death occurs usually from respiratory paralysis or aspiration pneumonia. The sensorium usually remains clear almost up to the time of death.

Differential Diagnosis should include meningitis, impacted third molar, peritonillar abscess with cellulitis, strychnine poisoning (no trismus; relaxation between spasms), and tetany (no trismus; typical posture). Trismus (lockjaw) should always be assumed to be due to tetanus until proved otherwise,

Prognosis is grave. The death rate

is greater than 50%. If the incubation period is greater than 9 days, the outlook is reasonably good. The longer the period between initial symptoms and convulsions, the better the prognosis.

Treatment consists of:

- Removal of the source of infection, by wide excision of the wound. Infiltration of the wound with 10,000 U. of TAT has been advised, but is of questionable value. Irrigations of the wound with hydrogen peroxide and packing it with activated zinc peroxide are useful measures for overcoming the anaerobic state of the wound.
- Prevention of more toxin from reaching the central nervous system, by administering 100,000 U. TAT I.V. initially, and 5,000 U. daily I.V. thereafter until symptoms abate. A skin test should of course be done first. Intrathecal dose of 15,000 to 20,000 U. of TAT appears advisable.
- 3. Rest and control of hyperirritability with:
 - a. Quiet room
 - Paraldehyde—10 to 40 cc. per hour rectally (no drugs that are respiratory depressants should be used)
 - c. Tolserol, curare, and thiopentone with pethidine have proved useful in controlling convulsions and producing muscle relaxation in some reported cases.
 - 4. Supportive measures:
 - a. Oxygen tent
 - b. Respirator
 - c. Tracheotomy and suction
 - d. Maintenance of fluid balance (Levin tube and I.V. feedings).

Gas Gangrene

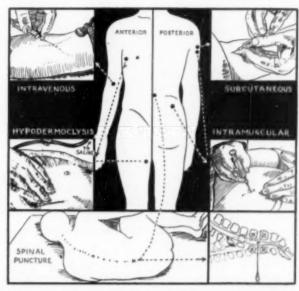
Grossly contaminated wounds, especially war wounds and those asso-

ciated with compound fractures, often contain organisms which can produce gas gangrene (Clostridium welchi, Cl. septique, etc.). The patient with this type of wound should be given polyvalent gas-gangrene antitoxin (after skin test) along with tetanus immunization.

Gas gangrene is due to the organisms, plus circulatory failure (e.g., laceration or thrombosis of the main vessel to an extremity), and extensive muscle damage. Symptoms and signs are: sudden, severe pain in the wound, brawny edema, thin sero-sanguinous exudate, crepitation, mottling of the skin, blebs, "deadhouse odor", gas in the muscle planes on x-ray examination.

Treatment consists of: a. immediate amputation if the blood supply is gone and all muscle groups are involved, b. local excision of muscle if the condition is limited, c. penicillin (1 to 2,000,000 Units per day), or Terramycin or Aureomycin (2 gm. per day) I.V., d. whole blood transfusions. Antitoxin is of little value after the disease is established.

Clini-Clipping



Various types of injections and the anatomical areas best suited for them.

EDITORIALS

Counterbalancing War, Famine, Pestilence and Contraception

Turner of the National Foundation for Infantile Paralysis and the International Union for Health Education of the Public points out the tremendous saving of human life which has resulted from the progress of medicine since the turn of the century. This he graphically illustrates by showing there would have been nearly 2,000,000 more deaths in this country last year if we had had the death rate of 1900. Dr. Turner estimates that world population is doubling every 50 years; population is increasing at the rate of a thousandfold every 500 years.

The Hospital in History

We are apt to think that the mode.n hospital at its best has never been surpassed. But the Mohammedan hospital at Damascus (founded in A.D. 1160) made no charge for its drugs and general therapy. The great hospital at Cairo (A.D. 1276) was "a huge struc-

ture with fountains playing in the four courtyards, separate wards for important diseases, wards for women and convalescents, lecture rooms, an extensive library, out-patient clinics, diet kitchens, an orphan asylum, and a chapel. It employed male and female nurses, had an income of about \$100,-000, and disbursed a suitable sum to each convalescent on his departure, so that he might not have to go to work at once. The patients were nourished upon a rich and attractive diet, and the sleepers were provided with soft music or, as in the Arabian Nights, with accomplished tellers of tales. There were courses in clinical medicine, pharmacology, and therapeutics . . . chemistry was held in special esteem." (Garrison)

The Malaria Eradication Project

The eleventh session of the World Health Assembly will be held in the United States next spring, by invitation of the American Government. In what city the meeting will be held has not been announced as yet. Congress has authorized the appropriation of \$400,000 to cover the costs. Dr. Leroy E. Burney, Surgeon General of the United States Public Health Service, is the leader of this country's delegation to the Assembly. Headquarters of the World Health Assembly are in Geneva, Switzerland; the Regional Office of the World Health Organization's Pan American Sanitary Bureau is in Washington, D. C.

A principal goal of the Assembly is the total eradication of malaria in 63 countries populated by 1,211,000 people.

Psychic Casualties

Dr. William Sargant, in his Battle for the Mind: A Physiology of Conversion and Brain-Washing, relates the human phenomena evoked by revivalists to the effects of terror upon the behavior of Pavlov's dogs, frightening them out of their equivocal passive adjustments. He cites the work of the celebrated revivalist John Wesley in effecting religious conversions, impelling "a cathartic escape from fear of hellfire to a new viewpoint," much like the brain-washings of the totalitarians.

Pavlov, it will be recalled, taxed his dogs beyond forbearance by horror, fatigue and starvation, in which state they became amenable to new directions.

Thus the psychiatric casualties of war and their proper therapy were rationalized. Repetition of the terror seems to be the key to the problem. The technic of brain-washing is analogous.

Clini-Clipping

Heart wall showing chronic fibrotic myocarditis.





Medical Book News

Edited by Robert W. Hillman, M.D.

Biochemistry

Biochemistry. An Introductory Textbook. By Felix Haurowitz, Dr.med (Prague). New York, John Wiley & Sons, [c. 1955]. 8vo. 485 pages, illustrated. Cloth, \$6.75.

This elementary text is intended as an introduction to the field of biochemistry. It is written in simple style and well organized. The best feature is the list of references for further study, placed at the end of each chapter.

PAUL I. KEARNEY

The Addiction Problem

Management of Addictions. Edited by Edward Podolsky, M.D. New York, Philosophical Library [c. 1955]. 8vo. 413 pages, illustrated. Cloth, \$7.50.

This volume consists of 35 chapters contributed by various authorities in the field of alcoholism and drug addiction and was evidently directed to the attention of the medical and allied professions interested in the problems of alcohol and drug addictions. These begin with a description of the sociological factors in reform and treatment, and continue through biochemical endocrine

aspects and psychological conditioning, and chemical and endocrine treatments.

The physical and psychological aspects of drug addiction and various current methods of treatment for addiction to specific drugs, constitute the second half of this 413 page volume.

This book is a convenient compilation of current methods of treating alcoholism and drug addiction. It constitutes a handy reference for the busy physician who may want to become familiar with the current theory and practice in the care and treatment of habitual users of drugs and alcohol.

C. MILTON WEEKS

Pathologic Physiology

Pathologic Physiology, Mechanisms of Disease. Edited by William A. Sodeman, M.D. 2nd Edition, Philadelphia, W. B. Saunders Company, [c. 1956]. 8vo. 963 pages, illustrated. Cloth, \$13.00.

Now in its second edition, this comprehensive and authoritative volume fulfils the long-felt need for a text which discusses the alterations in the normal physiologic state which are induced by disease. Those sections dealing with the circulatory system are particularly well done and contain valuable clinical as well as purely physiological data. The section on the nervous system, which is new in this edition, should be, and probably will be, expanded in the future. Certainly, the rapidly advancing fields of psychopathology, psychophysiology, and psychochemistry should be an integral component of such a chapter.

Altogether, this is a fine volume and merits a place in every doctor's reference library.

MORRIS ZUCKERBROD

Gynecology

The Management of Menstrual Disorders, By C. Frederic Fluhmann, M.D. Philadelphia, W. B. Saunders Company, [c. 1956], 8vo. 350 pages, illustrated. Cloth, \$8.50.

This new volume by Dr. Fluhmann supersedes his original one written in 1939. This is an almost entirely new discussion of the subject, as many concepts have changed since the original book was written. The book presents the subject in a concise and clear cut manner without trying to confuse the reader with a multiplicity of extraneous details. A clear description of each menstrual disorder is given followed by sensible suggestions for its management and treatment.

This volume can profitably be read by anyone interested in this specialty as a refresher course but its greatest usefulness will be to the general practitioner, for whom it was designed, as well as to the student. Our present day cancer consciousness and the relation of abnormal bleeding to it makes this new volume particularly valuable.

WINFIELD E. STUMPF

The Roentgen Aspects Of The Papilla And Ampulla Of Vater

By

MAXWELL H. POPPEL, M.D. HAROLD G. JACOBSON, M.D. ROBERT W. SMITH, M.D.

This is a complete presentation of the roentgenologic survey of the anatomy, physiology and pathological states of the Vaterian region. It brings integration and meaning into a complex subject by presenting an inclusive affirmation approach not heretofore attempted.

The abnormalities of adjacent structures (notably the duodenum) are considered. This is especially important in formulating correct differential diagnosis.

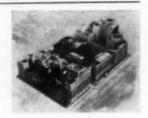
Roentgenologically considered, what are the criteria for appraising any given major papilla or Vaterian ampulla as normal or abnormal? The answer cannot be found in the existing roentgen literature so the authors have searched for the answer and set down their findings.

The approach is roentgen study from the basic anatomic (postmortem) and from the practical (in vivo) standpoints. The microscopic pathological findings obtained from surgical specimens and from autopsy material served as a bridge of explanation for those roentgen findings which did not conform to the normal basic anatomical types (including variants).

211 pages 150 illustrations

\$8.50, postpaid

CHARLES C. THOMAS • Publisher Springfield, Illinois



Mount Sinai Hospital

New York City

This metropolitan center admits 25,000 patients annually and treats another 80,000 in the Emergency Room. With over 1000 beds, there is an almost even split between ward and private patients.

Chartered in 1852 as a voluntary nonprofit general hospital, Mount Sinai admitted its first patients, in May 1855, to a forty-five bed, four story building, located on West Twenty-eighth Street, in New York City.

The Hospital today consists of twentyone buildings which occupy three square blocks fronting on Fifth Avenue between Ninety-eighth and One Hundred First Street.

Present bed capacity totals 1,009 exclusive of 104 bassinets. Five hundred twenty-three beds are for ward (service) patients; the remainder (486) are assigned for semi-private and private patients. Approximately 25,000 patients are admitted annually and receive more than 300,000 days of care. Of this total, 150,000 are ward days.

The Outpatient Department consists of ninety clinics, including all specialties and subspecialties in the field of Medicine. Two hundred thousand clinic visits are recorded annually. In addition, 30,000 patients are treated each year in the Emergency Room.

Administration Governed by a board of trustees consisting of forty-five members, Mount Sinai operates through a medical board. Composed of all chiefs of clinical and laboratory services and representatives from the attending staff, the medical board formulates and recommends general and professional policy to the board of trustees.

Dr. Martin R. Steinberg, Sinai's director and chief administrative officer, is assisted by a staff consisting of an associate and several assistant directors.

The Departments of Medicine, Surgery, Pediatrics, Obstetrics and Gynecology, Psychiatry, Radiology, and the Laboratory Departments of Chemistry, Microbiology, Pathology, and Physics, are headed by salaried, full-time chiefs.

Included in the teaching faculty of the hospital are 240 physicians who are board certified in their respective specialties. Of this number, 120 have medical school faculty appointments, chiefly with the College of Physicians and Surgeons of Columbia University, of which Mount Sinai is a major teaching affiliate. Approximately 500 physicians are on the Outpatient Department staff. The house staff consists of 130 residents and assistant residents, 42 general rotating interns, 4 dental interns and 40 educational fellows.

Conferences, Lectures Each of the major clinical departments has a weekly x-ray conference with the director of the Department of Radiology. Clinical pathological conferences, led by the director of the Department of Pathology, are held weekly. Special lectures are supported by ten Lecture Endowment funds. Seminars and journal clubs are scheduled in each of the departments at least once a month. Over 1,000 conferences and lectures a year are held at the hospital. Members of the house

staff find it convenient to attend the meetings at the New York Academy of Medicine, located two blocks from the hospital.

The Jacobi Library, situated within the hospital, contains 14,000 books and subscribes to more than 400 medical periodicals. The house staff is encouraged to use the library freely. The full time library staff, headed by trained medical librarians, is in attendance until 10 P.M. daily. Members of the house staff are given courtesy privileges to use the library of the New York Academy of Medicine.

Postgraduate Courses Under the aegis of the College of Physicians and Surgeons of Columbia University, the medical staff conducts 25 or more postgraduate courses at the hospital each year. Members of the house staff are permitted to attend most of these courses free of tuition. The American College of Physicians has repeatedly asked the hospital to arrange and conduct its out-

Indoctrination in laboratory disciplines is an important part of Mt, Sinai's program.







standing membership courses in cardiology and medicine.

Nursing and Social Service Programs Mount Sinai School of Nursing was established in 1881, one of the country's pioneer nurses' training institutions. There are 200 students enrolled in the three year program, with an annual graduating class of 65-70 students.

The nursing staff of 1100 includes registered and practical nurses, nursing aides, attendants, and ward helpers.

The Social Service Department trains students from the New York School of Social Work of Columbia University. Comprised of 40 case workers and supervisors, this department works closely with the house staff for the best interest of the patients.

Research and Fellowships A comprehensive research program embracing 200 special projects is an active phase of the hospital program. Close to one million dollars is spent annually in support of research from the hospital's Research Endowment Funds and from grants to Mount Sinai from the National Foundation for Infantile Paralysis, the United States Public Health Service, the Office of Naval Research, the Atomic Energy Commission, the American Cancer Society, the American Heart Association, and many other philanthropic foundations and individuals.

A partial list of the work of the staff would include such classical publications as the first descriptions of Brill's disease, Tay-Sachs disease, Libman-Sachs disease, thromboangitis obliterans (Buerger's disease), subacute bacterial endocarditis, histopathology of Gaucher's disease, the Shwartzman Phenomenon, regional ileitis, and many others.

Ward rounds at Mount Sinai Hospital,





Weekly CPCs in the Blumenthal auditorium are heavily attended by staff doctors.

Techniques originated and developed at Mount Sinai include the use of endotracheal anesthesia in thoracic surgery (Lilienthal), the citrate method of blood transfusion (Lewisohn), intravenous urography (Swick), and the Rubin test for patency of the fallopian tubes.

The house staff is invited to research seminars and an active interest in research is encouraged.

A ten story laboratory building recently completed houses the most modern of facilities both for research as well as routine work. Experimental laboratories, including several floors for animal work, are located here. Dozens of additional laboratories are situated close to the wards and are convenient and available to the house staff.

Clinical Material Mount Sinai serves patients chiefly from the New York City area and the neighboring communities of Long Island, Westchester, New Jersey and Connecticut. All races, creeds and economic strata are represented, providing a diverse group of individuals in which is found a broad spectrum of illness covering practically all disease entities.

Cases of special interest such as lupus erythematosis, ulcerative colitis, ileitis, lower nephron nephrosis, sarcoidosis and myasthenia gravis are regularly referred from all parts of the nation and from many other countries for care at Mount Sinai Hospital.

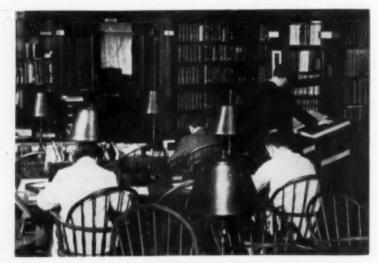
Approximately 20,000 surgical procedures are performed annually, the greater proportion of which is in the category of major surgery. More than 5,000 babies are delivered annually. The average daily census in the hospital is 825, Approximately half the patients are ward (service) cases.

Some 450 to 500 autopsies are performed annually with an autopsy rate of 55%-60%.

Construction in Process A modern Radio Therapy Department housing



These exclusive meal sessions for the house staff provide climate for shop talk.



The hospital's Jacobi medical library affords excellent reference facilities.

a 20-million volt Betatron, a cobalt bomb, and other radiation equipment is in process of construction to replace the present department.

The erection of a Psychiatric Institute of 100 beds to replace the current 21 bed psychiatry unit has been approved by the board of trustees and is now in the active planning stage. To accommodate the increasing number of patient visits to the emergency and reception area, these units are being expanded and modernized.

Recreation The main house staff quarters contain two recreation rooms, one for billiards and ping pong, the other used as a television, reading and game room.

Members of the house staff are given courtesy membership in the YM and

YWHA located just a few city blocks from the hospital. All membership privileges are available at the "Y" including the use of a modern gymnasium and swinning pool.

A box at the New York Philharmonic concerts and courtesy tickets for the Lewisohn Stadium concerts are furnished to the house staff.

The "Oaks" estate, operated by the Nurses' Alumni and located on Long Island Sound at New Rochelle, N. Y., welcomes members of the house staff. Facilities are available for tennis, baseball, ping pong, bicycling, picnicking, and swimming in season.

A traditional annual event at the hospital is the New Year's Eve House Staff Show, followed by a buffet supper and dance.

The editors wish to thank Max Fuchs, D.M.D., Assistant Director of The Mount Sinai Hospital, for his assistance in preparing this article.



It's alright, Mr. Jones, they're just deciding who gets to do your operation!

Who Was Still?

BY ARTHUR J. PRANGE JR., M.D.*

Sooner or later every physician in the course of his professional or community duties rubs elbows with an osteopath.

Gradually, he becomes aware of the prevalence of osteopathic practice. And eventually he will wonder: "How did it get started?"

It is to this question that we address ourselves in this article. But to do so with any accuracy we must adopt for a time the detached attitude of the historian who wishes to know "what happened" and cares little whether or not the event was "good, bad or indifferent."

Basic to the origins of osteopathy is the life of Andrew Taylor Still. Few other men in history have played such an exclusive part in founding a field of practice or belief, medical or otherwise. For a number of years Andrew Taylor Still and osteopathy were almost synonymous terms.

The roots of the Still family tree tap the earliest days of American history. Revolutionists, Indian fighters, frontiersmen — all are represented. Still's father, Abraham, was an ordained

^{*} Dr. Prange was graduate from a Michigan medical school, took a rotating internship and one year of residency before being recalled for Navy service in 1952. He is currently in his third year as a resident in psychiatry.

Here are some interesting highlights of the life of an almost forgotten figure, a doctor who rejected standard concepts and methods of medical practice and became one of the most controversial figures of his time. As few before him, Andrew Taylor Still's dynamic qualities of leadership enabled him to establish a system of the healing arts which exists in modified form in our society.



Methodist minister, a circuit-rider of Tazewell County, Virginia; his mother, Martha Moore, was raised in the backwoods of Tennessee and was the daughter of James Moore, who had spent several years as the prisoner of the infamous Shawnee chief, Black Wolf. To these sturdy folk, Andrew Taylor Still was born on August 6, 1828. Twelve years later the family moved to Schuyler County, Missouri, where Andrew was promptly ordered to assist in the building of the log school that he later attended - harsh work for any boy. The injustice was short-lived, however, for within a few years Still was compelled to drop out of school to help tend the family farm.

Medicine and Religion Although Andrew's father was a preacher, in true frontier fashion he had other vocations as well—farmer, millwright, and doctor—according to the occasion. As Andrew began to show interest, the elder Still frequently took him along on his missions, which consisted of holding revival meetings for the needy in spirit and afterwards administering medicine to the infirm in body.

This in essence was the medical training of Andrew Still. But in those days it was in no way singular nor was it thought deficient. In other than the metropolitan centers, apprenticeship was the usual means of gaining a medical education; a period of guidance and a handful of remedies made a man a doctor.

Tragedy In 1849, Still married and took his bride to western Missouri. Here he found peace and satisfaction as he farmed and treated the local Indians. Then, in 1859, a tragedy occurred that was to change the course of the young doctor's life. Still's wife and two sons died suddenly of what, in retrospect, must have been epidemic meningitis.

This terrible loss haunted him, and in his later writings Still stated that it was the first of many episodes that awoke him to the fact of the "pitiful ineffectiveness" of drug therapy.

Legislator Still remarried, sired a daughter and two sons; his sons later became members of the first class of the American School of Osteopathy.

Again there was a brief period of tranquillity as Still's practice of orthodox medicine flourished and his fortunes prospered. The owner of two farms, a sawmill, and considerable property in Missouri and Kansas, Still was elected by the people of Douglas County to represent them in the Missouri State Legislature. In addition to these activities he somehow found time and energy to become one of the founders and early benefactors of Baker University at Baldwin, Kansas.

Soldier In 1861, the course of Still's life was again altered. This time the event was not the indifferent cruelty of nature, but the catastrophe of the Civil War. Never one to suppress his opinions, Still had been an ardent abolitionist and an intimate of John Brown and Jim Lane during the hectic pre-war years in Kansas and Missouri. When war finally came, Still promptly enlisted

Osteopathy

Definitions of osteopathy include: "A system of therapeutics based on the theory that diseases arise chiefly from displacements of bones, with resultant pressure on nerves and blood vessels, and can be remedied by manipulation of parts."—Webster's Collegiate Dictionary, Fifth Edition.

Also "1. Any disease of a bone.

2. A system of therapy in which diseases are treated by manipulating the bones and by other manual manipulations intended to restore the deranged mechanism of the body. The official definition of osteopathy adopted by the American Osteopathic Association is: 'That system of the healing art which places chief emphasis on the structural integrity of the body mechanism, as being the most important single factor to maintain the well-being of the organism in health and disease." -The American Illustrated Medical Dictionary, 21st Edition.

From Stedman's Medical Dictionary, 18th Edition, the following is taken: "1. Any disease of bone.

2. A school of medicine based upon the theory that the normal body, when in correct adjustment, is a vital machine capable of making its own remedies against infections and other toxic conditions. The office of the physician of this school is to search for, and when found, to remove if possible, any peculiar condition in joints, tissues, diet or environment which are factors in destroying the natural resistance. The measures upon which he relies to effect this end are physical, hygienic, medicinal, and surgical, while relying chiefly on manipulation."

in the Ninth Kansas Cavalry. Although his services were recognized and he was promoted to the rank of major, Still became less and less satisfied with existing methods of medical practice; there seemed to be so little that he could do to cure or mitigate the sufferings of his fellows-in-arms.

No Record In a campaign against General Sterling Price, the famous Confederate raider, Dr. Still sustained injuries that later prompted him to apply to the federal government for pension. His commanding officer wrote on his behalf: "... while on the Price raid, from pressure of arms and ammunition on his bowels, claimant contracted rupture, and in battle, he contracted heart

Homeopathy

A system of therapeutics called homeopathy was developed by Samuel Hahnemann (1755-1843) which was based partly on the doctrine of similars or law of similiar which, from the aphorism similia similibus curantur, indicated that like things are cured by like things. In essence, this theory held that certain drugs, when given to a healthy person in large doses, will produce symptoms of a disease. The same drug, given in small doses, will cure the disease having these symptoms.

Homeopathy also embraces the theory that the potency of drugs may be increased by extensive trituration or dilution, and that most chronic diseases are simply manifestations of a suppressed "itch" or "psora." — Stedman's Medical Dictionary, 18th Edition, and Garrison's History of Medicine.

disease, all of which occurred in October, 1864." In addition, his personal physician testified: "He was afflicted with valvular disease of the heart, with syncope while asleep while lying on the left side, and is ruptured on each side, with tendency to paralysis of left side and arm."

This array of symptoms apparently had as little effect on the War Department as it did on Still's longevity.

He was denied his pension because there was no official record that his regiment had ever been a part of the United States Military Service.

He lived to be eighty-nine.

Medical School Following the war, Still enrolled in the Kansas City School of Physicians and Surgeons. Whatever he may have learned about the uses of purges and emetics and about the diseases, fever and flux, Still was apparently unsatisfied. Returning home, he procured, by means unknown, a human skeleton and began to accumulate a considerable medical library.

Dr. Still soon became a local legend, for he was frequently to be seen walking down the street with human bones protruding from every pocket and a copy of "Gray's Anatomy" under his arm. In those days, when the human body was in itself an object of reverence and greatest prudery, mothers as a matter of course lowered window shades as he passed by on the street. But ostracism troubled him little, and Still continued his studies.

Out of Chaos In 1874, he was ready to announce his system of therapy. According to Still's own account, one day in July of that year, he asked himself, "Where are the patients that we treated yesterday?" and he answered, "They are dead, . . . " "From that time on," writes Still, "I was an osteopath."

But to understand his decision we must first examine its historical setting.

Medical education was in a state of utter chaos. At that moment there were few schools, although from 1873 to 1890, 112 suddenly materialized in this back room and in that office. Quinine, calomel, and strychnine were alternately invoked according to various symptoms. Anesthesia, rediscovered, had been employed for several decades, but Lister's work on surgical antisepsis was to wait two more years for general acceptance. Laparotomy was an uncommon procedure. Antibiotics, were unimagined. Ehrlich was twenty years old.

Reform Still was not the first to try to reform, abandon or limit drug therapy. Hahnemann and his homeopathic school, following the "principle of the thirtieth," recommended pharmacological drops in the therapeutic bucket, or minute amounts of diluted drugs.

In the United States, the Thomsonians held that only drugs of vegetable origin were safe and effective, and this idea is still expressed in the advertisements of over-the-counter nostrums — "contains vegetable compounds only." Thompson, by the way, was a farmer (1796-1843).

Sylvester Graham, an English dietitian (1794-1851), believed that the key to health lay in the extension of temperance to food as well as alcohol, Children still munch wholegrain crackers that bear his name.

Still's Principles It is important to note that these reforms for the most part were not in the direction of innovation but of renunciation. Still joined this iconoclastic trend when he described his principles.



- The body contains in itself all the drugs and humors necessary for the maintenance of health and the cure of disease.
- Most diseases, except obvious cases of trauma, are due to malpositions of the bones of the spinal column and these malpositions of the vertebrae cause pressure on spinal nerves, thereby interrupting the "vital flow" through the nerves and predisposing to diseases of the parts supplied.
- When disease is not due to a spinal lesion it causes a secondary lesion of the spine, further decreasing the body's resistance and thus setting up a vicious cycle.
- All that is necessary to cure disease is to relieve pressure on nerves, thus allowing greater quantities of blood to flow to the part and effect a cure. This is the "Law of the Artery."
- Drugs are poisons and are therefore

worse than useless in the treatment of disease. (For example, Still believed that tabes dorsalis was caused by mercury treatment.)

Allusive Concepts These statements are absurd—and profound, Even osteopaths no longer hold to them. But if we read between the lines we find adumbrated certain fundamental concepts of modern medicine.

Still's first principle can be construed as a crude statement of the humoral theory of immunity,

In the second, there is recognition of the phenomenon of locus minoris resistantiae, although there is rigid insistence that the locus must be the spinal column.

Still says that the body contains all that is needed for the cure of disease, and one is constrained to think of replacement therapy and the use of biologicals,



(Vol. 85, No. 7) July 1957

His statements, taken as a whole, seem vaguely allusive to current concepts of adaptation. Still's aim was to enhance the natural resistance of the body, and he thought he had found a way to do it.

God's Drug Store This drugless medicine was not well received. By 1875, Still's fortunes had dwindled to such an extent that he was forced to move his family to Kirksville in northeastern Missouri. Here his reception was more cordial, though it seems certain that his captivating manner was at least as great a factor as his medical theories. Still's personality, forceful and magnetic, was in fact his downfall. He was suffused with a sort of homespun mysticism, and his writings have an unmistakable messianic flavor: "God's drug store is not on the corner of the street. but is in the body and the healing power is within."

Early osteopathic writers delight in recording examples of Still's power of divination. During one of his first Springs in Kirksville, a woman came to Still's office over a corner grocery and said that her neighbor was frightfully ill. Thereupon Dr. Still faced the direction of the afflicted woman's house, several miles removed, and closed his eyes. In a few minutes he turned to his visitor and said, "Your friend has a goiter. Bring her here and I shall remove it." (According to the writer, the woman came; she had a goiter; Dr. Still removed it.)

Alone From 1874 until 1892, when the first osteopathic school was established, Still carried the banners of his new practice virtually alone. Osteopathy in

^{*}A. G. Hildreth as quoted by E. R. Booth in "History of Osteopathy and Twentieth Century Medical Practice," Caxton Press, 1924, Cincinnati, Ohio.

those days seems to have been a nocturnal pursuit, and Still gives many accounts of waiting in the kitchen while the unsuspecting "regular doctor" treated his patient and left. But along with these escapades he describes many cures. Benefits There can be no question that Still did in fact benefit many of his patients. How can we account for this? First of all, as already described, the contemporary practice of orthodox medicine was none too precise, which is to say that Still's results were measured against standards much inferior to those we know today. Secondly, if, as we have reason to believe, hysterical conversion reactions were more common in the repressive, fundamentalist millieu of Still's time than they are today, then it would be expected that a man of his character would achieve, even unwittingly, a number of cures or remissions on the basis of suggestion.

Finally, his manipulations of the spine may have done no good beyond suggestion, but they also did little harm, except in the occasional case for which more effective treatment was available. Unhindered, nature is sometimes kind. Recognition Unfortunately, Still considered his results to be proof of his theories, and so did many others. Encouraged by a burgeoning group of sympathizers, Still succeeded in founding the American School of Osteopathy in Kirksville, For a year he served as a faculty of one, However, in the summer of 1892, a Scottish surgeon, William Smith, visited a fellow M.D. in Kirksville and learned of this "deplorable" local development, Stimulated by curiosity, he visited Still, and before this meeting ended at 4 o'clock in the morning, Dr. Smith had agreed to return in the Fall to become the first professor

of anatomy in the new school.

With other converts and growing acclaim, legislative recognition inevitably followed, and during these ascendant years, Still's leadership was undisputed. His proponents wrote of him in tones of religious devotion, and it is a defect of any biography that we must view him chiefly through their eyes. It became the mode to compare the "Old Doctor" to the martyred Abraham Lincoln—"Lincoln freed us from slavery, Still from drug therapy"—and their humor was cited as similar: "If I tell a lie today and another tomorrow, then I will be as reliable as a druggist."

Schism But as osteopathy grew and Still practically became canonized, great strides were being made in the main stream of medicine. At last osteopathy was presented with a choice: it could follow or perish. For a time there was a schism in the ranks, but in 1905 a subject no less heretical than pharmacology was introduced into the Kirksville curriculum. In one of his later lectures Still himself referred to surgery: "There are cases which the knife may cure, but osteopathy must always be tried first."

With these developments and with advancing years, Still gradually lost the reins of his movement.

Though his personal prestige never suffered, he lived to see his theories consigned to reverent disuse.

If there is a lesson in all this, it is perhaps best expressed by paradox. It is possible to be right for wrong reasons, or more precisely, it is possible intuitively to hint at the truth and to "prove" one's contentions with essentially irrelevant data.

It is possible to be a sincere man and a courageous man—and yet be mistaken.

The Physician's Role in Military Science

One of the newest recognized medical specialties, aviation medicine is concerned with the health of those who fly. As man accepts each new challenge of air travel, aviation medicine specialists must first remove the barriers. Temperature, speed, gravity, altitude, these are the forces the new specialist will conquer if man is to attain safety in the limitless space above the earth's surface.



Maj. Gen. Ogle

MAJOR GENERAL DAN C. OGLE, (MC)
Surgeon General, U. S. Air Force

Men of medicine have always been interested in new horizons, new inventions, new scientific processes, and new approaches to better living. Because of this interest, physicians have had an important part in our industrial and economic progress.

Physicians have also assisted in adapting the products of physical science to military science, thus strengthening our national defense and security.

Study and Research Few people realize what medical science has accomplished and is contributing every day for their health, safety, welfare, and security. Few patients are ever fully aware of the lifetime of study and research that has gone into the discovery, development, and testing of each new miracle drug, diagnostic procedure, or surgical technique used to

restore their health or save their lives.

Probably fewer realize just how much of their present security, liberty and freedom depends on the physician's place in national defense.

Frequently, the physician helps weld physical and medical sciences into a mutually-coordinated, successful achievement. This is particularly true in military science which today is intimately integrated with engineering and industry in the development of new weapon systems for national defense.

Decisive Weapon Of high importance on the list of instruments of warfare is the airplane. The airplane was not invented as a weapon. However, men of vision very early determined that it had the capacity of becoming a superior and decisive weapon, and engineers have proved this by creating aircraft and munitions which admit no boundaries of distance, speed, altitude, or explosive tonnage carried.

Had it not been for physicians and other bio-scientists, aeronautical engineers would have encountered impossible barriers long ago, since these weapons are manned and are operated in an environment quite foreign to man's native physiological adaptability. Survival after ascending through ninetyfive percent of the earth's atmosphere and traveling at this altitude at rates calculated in multiples of the speed of sound is possible only because the science of aviation medicine has constantly and systematically been applied for man's protection, comfort and survival in the air.

Human Engineering The physician and allied bio-scientists of aviation medicine can, indeed, be cited for their contribution to human engineering and aircraft design; for the development of safety devices such as ejection seats, pressure suits, pressure cabins, oxygen systems, protective clothing, and the processes of selection and health programs of those who maintain our air combat readiness in peace and in war.

Much of what is said of aviation medicine is also true of other branches of military medicine, for the combination development of physical and medical sciences in the development of various complex weapon systems is certainly not limited to those of the air.

Young Physicians Years ago in aeromedical research laboratories, young physicians made trips to simulated altitudes of 100,000 feet in pressure chambers. At these altitudes they were studying altitude physiology and testing protective devices produced by medical engineering. Ascents to such altitudes

are significant when you realize that circulating blood will boil at an altitude of 63,000 feet and consciousness is lost in a matter of seconds at less than half this altitude.

Escape from aircraft at high speeds and high altitudes was engineered in medical research laboratories. The first men to sit in an airplane seat and be catapulted 70 feet into the air by an explosive charge were young physicians—the ejection seat is now standard equipment.

The first man to test protective equipment against the traumatic forces of excessive acceleration, deceleration and crash was a physician. The first aviator to actually jump from altitudes requiring life-saving protective escape equipment against freezing, hypoxic and blast dangers was a physician. The first man to experience the effects of explosive decompression, as might happen when a pressurized cabin ruptures, allowing the altitude to instantly jump from ten to forty thousand feet, was a physician.

These are but a few of the more dramatic episodes of the part that physicians are playing in making possible the manning and operation of modern combat aircraft.

New Challenges Aerial and space vehicles now projected on the engineer's drawing board offer new challenges to medical research. At present our scientists are working on methods of sustaining life, within reasonable degrees of comfort and safety, in sealed capsules which are necessary if man is to live for sustained periods at speeds and altitudes already attained. As the mothering effect of the earth's atmosphere is left below, airmen encounter the toxic effects of ozone concentration, heavy particle cosmic rays, and solar x-rays,

as well as lack of oxygen and diminished barometric pressure. Supersonic fighter aircraft traveling at speeds of Mach 3 develop heat at a rate which would melt a ton of ice per minute; engineering and medicine will conquer this heat barrier just as they have solved the others.

Environmental Medicine This discussion of the increasing cooperative interdependence of the physical and medical sciences demonstrates the high position that medicine plays in industrial development and in the achievement of our country's military security. We have difficulty in attaining or even comprehending an optimum environment; however, medicine must meet this challenge whether it be considered from without or from within, since all medicine is in one way or another environmental medicine.

Vital Resource The efficient performance of man depends on a state of equilibrium between his physical and psychic components, as well as between them and his environment, environments created by disease, disarrangement or displacement. I refer again to the increasing interdependence of the physical, social and medical sciences in maintaining biological, physiological and emotional equilibrium without which man is subject to serious disruption and failure in his social and industrial world. Maintaining optimum equilibrium between the military man and his environment presents the basic problem

of military medicine.

In this discussion, no attempt has been made to cover the full spectrum of the physician's responsibility. To do so would involve more extensive discussions of the social and basic sciences, of philosophy and religion as well as the growing number of clinical specialties. There has been an attempt to give but a few factors bearing on the ever-expanding sphere of medicine and to emphasize the strategic position of the physician in military science, particularly aviation medicine.

National welfare and security require the devoted and unselfish attention of many men of broad vision and understanding; by men of science and wisdom and strength who are able to bring our total national resources to bear on the common problem. Medical science is a growing and vital national resource that should be strengthened rather than diminished by use,

We as medical and health specialists must remember that the nation has no resource greater than the health of its people. We must remember also that a strong national defense needs the daily participation and support of the medical profession.

We as physicians are guardians of a public trust that goes beyond bedside medicine. Our profession challenges us with many roles having a profound bearing on human welfare.

Can

Foreign Doctors Practice Here?

Licensure for Foreign Graduates in New York State

All graduates of foreign medical schools must meet certain requirements of the New York State Board of Regents. It is necessary, even for graduates of approved foreign schools, to obtain permission from the Board of Regents to take the licensing examination.

Any hospital training required by the Board of Regents may be taken in any approved hospital in the United States, and all services are recognized except anesthesia.

Certain graduates will be required to take formal education in the United States, and at present there are two programs set up and approved by the Regents. The courses required may be for one or two years. No credit is given for foreign postgraduate or specialty training.

General Requirements

 A written English language examination for all who did not have their education in schools using English is required. No endorsement of licenses is recognized from other states or from the National Board of Medical Examiners.

At least first citizenship papers are required.

4. Since there is a large number of applicants, it is important to apply early for permission to take the New York State licensing exam. Usually it requires at least six months to receive an answer.

Medical Background There is no distinction between a United States citizen and an alien in respect to considering medical background. Also, no special credit is given to foreign physicians who have served in the United States armed forces. There is only one examination and every applicant who is eligible for licensure by examination must take this examination.

Internship For graduates of foreign schools not on the approved list, a rotating internship is one of the requirements for admission to the examination.

Residency training does not satisfy this requirement,

Credentials Before consideration can be given to credentials of foreign graduates of those medical schools not on the approved list, the following must be submitted:

- Original credentials from foreign schools. These must include a certificate from secondary school (sometimes known as maturity certificate); student books, official transcripts of subjects or courses with attendance and marks obtained, "leaving" certificate, absolutorium, or other official documents showing exact dates of attendance and subjects pursued in higher and professional study. Also the diploma and degree (if degree is separate from diploma, submit both), and a license, if separate license was obtained, must be submitted.
- Translation of credentials. Documents in a language other than English submitted to the department must be accompanied by complete translations attached thereto. To be acceptable, a translation must be made by a person properly qualified in the language to be translated. This person must be either a member of the language department of a college or university registered by the New York State Education Department or an officer or employe of a translation bureau or service satisfactory to the department or an American consul in the country where the education was taken.

All translations must contain an affidavit of verification at the end, sworn to by the person making the translation that he has read the same after it has been completed; that it is a true and correct translation of the original; that the entire document has been translated.

Failure to comply with this require-

ment will result in all translations submitted being returned to the applicant for compliance with the requirement. Under no circumstances will the department accept translations by the applicant,

Specific Requirements Pre-professional requirements for the study of medicine are:

 Candidate shall present evidence of having satisfactorily completed two years of study toward a liberal arts degree registered by the department;

In some states it is impossible for the foreign-trained physician to obtain a license. Proud of his own training, the foreign-trained physician is apt to resent this and wrongly conclude that these states prohibit licensure of foreign-trained physicians solely because they are foreignborn. (This is not true. American-born physicians trained abroad meet exactly the same exclusion in these states.) However, it is true that certain states make this exclusion because they do not believe they have adequate facilities or criteria at present for examing each foreigntrained physician who wishes to apply for licensure.

The entire philosophy of state licensure is to insure the American public the highest possible level of professional competence in medical care.

For some time there has been a growing effort to establish a uniform medical practice act acceptable to all states. But in the interim, the foreign-trained physician must check individual requirements established by the state in which he desires to practice in order to determine his eligibility for licensure.

As a matter of interest to our readers the editors will present from time to time, various state licensure requirements as they concern foreign graduates. This issue deals with New York State. or its equivalent as determined by the Commissioner. The required two years of college study shall include at least six semester hours in English, physics, biology or zoology, and general chemistry; three in organic chemistry.

 All unregistered medical education outside the United States and Canada must be approved by the Board of Regents.

Petitions should be submitted as soon after graduation as possible.

4. American students in Netherland's medical schools must complete clerkship requirements in Holland hospitals supervised by the medical faculties and pass the final clinical medical examinations before Regents will accept a petition.

 American students in Swiss medical schools must obtain a certificate of medical studies and a Doctor of Medicine degree.

6. If internship is a requirement of

foreign schools for graduation, it must also be served by American students studying in foreign schools.

Graduates of unapproved schools may submit a petition for admission, but there is no assurance that favorable action will result.

8. Usual minimum requirements for graduates accepted from unapproved schools invariably include an approved rotating internship in a hospital approved by the American Medical Association. Two additional years are also required. These two years may be in formal medical study, or a combination of one year of study and a year of hospital service acceptable to the Regents.

Rate of Acceptance The most recent (1955) AMA figures show 159 foreign-trained physicians received licenses in New York in that year. Among the 48 states, this figure was exceeded only by Ohio with 160.



"You're the first proctologist I've ever met . . . say something proctological."

Investing For The Successful Physician

Prepared especially for Medical Times by C. Norman Stabler, market analyst of "The New York Herald Tribune."

INVESTMENT PROGRAM FOR DOCTORS

A prudent and wisely chosen plan for financial security is certainly a matter of prime importance to members

of the medical profession. With few exceptions they are self-employed, without the advantages of pension or deferred profit-sharing plans now becoming available to business and industrial executives in increasing numbers.

Because of changing times, conditions and

personal situations, no one investment program will fill the needs of all doctors alike, and none is without the element of risk.

In the hope that a discussion of the subject may prove of value to individual members of the profession, MEDICAL TIMES has consulted George K. Whitney, a trustee of Massachusetts Investors Trust, the oldest of the open-end investment companies in this country. M.I.T., as it is known, has more than \$1,000,

000,000 in assets, and nearly 160,000 investors. About 14 per cent of its outstanding shares are owned by 12,400

fiduciary and institutional holders.

In the suggestions which follow Mr. Whitney deals with overall investment planning for retirement and estate building. Individual doctors may thus be guided toward the formulation of a plan that will best suit each individual's re-



C. Norman Stabler

quirements.

A savings program for every doctor is certainly a wise measure, but he points out that savings need not, and probably should not, exceed an amount adequate to meet contingencies and emergencies.

As for life insurance, its purpose is protection of the family against untimely death of the head of the family. When a man has a young and growing family the following types of insurance are worth serious consideration:

- term insurance, which provides the greatest amount of protection at the lowest rate:
- decreasing term insurance to cover home mortgage liability;
- endowment insurance to provide for or guarantee the e'ucation of children. This last type, however, is relatively expensive and thus cuts into the total amount of protection most persons can afford to buy.

As to investments, the usual types include bonds of various sorts, preferred and common stocks of corporations, and investment company shares.

There are many different types of bonds. The most high-grade are United States Government bonds. Municipal bonds in general are another form of high-grade investment. These are taxfree and accordingly may be a good purchase for persons in upper income tax brackets because they may provide net yield after taxes higher than on United States Government obligations. Corporate bonds are of various grades, and the amount of yield ordinarily measures the risk involved. Highgrade bonds, however, often do not yield very much more than U. S. Government bonds.

Preferred stocks, when carefully selected, are usually regarded as a good type of investment for purposes of safety and security. As with bonds, however, preferred stocks afford no protection against inflation, and in addition there is no assurance of recouping the full amount invested when the preferred stocks are sold.

"Carefully selected common stocks offer a number of important investment advantages," Mr. Whitney says. "For example, (1) possible protection against continued future devaluation of the dollar; (2) participation in further growth of American industry; (3) participation in the increase in earnings of companies as the result of new product development and product improvements arising from scientific research."

Guide For Investors

Based on recommendations of the Securities and Exchange Commission in cooperation with the New York Stock Exchange, American Stock Exchange, National Association of Securities Dealers and others.

- 1. Think before buying, guard against all high pressure sales.
- 2. Beware of promises of quick spectacular price rises.
- 3. Be sure you understand the risk of loss as well as the prospect of gain.
- 4. Get the facts do not buy on tips or rumors.
- 5. Give at least as much thought when purchasing securities as you would when

- acquiring any valuable property.
- Be skeptical of securities offered on the telephone from any firm or salesman you do not know.
- Request the person offering securities over the phone to mail you written information about the corporation, its operations, net profit, management, financial position and future prospects. Save all such information for future reference.

All types of investment include an element of risk. It is true of bonds and preferred stocks, and it is most certainly true of common stocks. Some stocks have a lower element of market-price risk than others. For example, the stocks of many public utility companies with relatively secure income are known as "defensive" stocks. A different variety of common stocks is called "cyclical." These are stocks which may yield a relatively high rate of return at certain times but which on the average are more subject to fluctuations of the business cycle.

A third type is known as "growth" stocks. A typical growth stock is the stock of a company growing faster than the average for the national economy as a whole, which has able and progressive management and which very often engages in scientific development and research programs. In many instances such a large proportion of their earnings goes into research and development activities that current dividends are not relatively as great as the average of other companies. The hope is, however, for higher levels of earnings and profits in the future as the result of this "plowing back" of earnings.

"Although it can not be assumed that the past record is indicative of future results, and in fact results may run counter to changes in the cost of living, prudent investing in common stocks does offer a possible method of hedging against inflation by possible growth of an investor's principal and income, Mr. Whitney says. "The vital question is how may the ordinary individual best go about attaining such an objective?

"One answer is to hire capable pro-

fessional investment counsel. This is a good method, but it is only feasible, because of the cost of such services, for investors of larger means rather than those building up an investment account 'from scratch.'

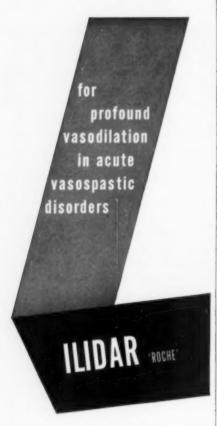
"Another method is to follow the advice of capable and competent investment dealers. Most doctors, however, do not have the time for the consultation involved properly to use this method of common stock investment. Furthermore, they lack the time to take care of keeping track of their investments.

"Another and certainly not uncommon method of investing in the stock market is to be your own investment counsel and thereby assume full responsibility for results, but common stock investing is not an easy science. There is no substitute for the hard work of analyzing industries and individual companies, for the unremittent search for opportunities, and for the constant vigilance required to avoid pitfalls. Probably relatively few individual investors have the knowledge of techniques essential to analyzing securities or have sufficient background for recognizing basic trends in the economy."

There is still another way of investing, through the use of investment company shares.

There are two main types of investment companies. One is known as the "closed-end" type and the other the

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increases peripheral circulation and reduces vasospasm by (1) adrenergic blockade, and (2) direct vasodilation. Provides relief from aching, numbness, tingling, and blanching of the extremities. Exceptionally well tolerated.

FLIDAR . BRAND OF ATAPETINE

HOFFMANN-LA ROCHE INC HUTLEY, N. J. "open-end." Closed-end investment companies have been in existence for a long time. Their ancestry dates back to the Scottish and British investment companies of more than 100 years ago. Closed-end investment companies have a fixed amount of capital and a fixed number of shares outstanding. Their shares are traded on stock exchanges or are sold over the counter just as the stocks of industrial corporations are sold.

"Generally speaking, closed-end investment companies are of smaller size than open-end companies and consequently are apt to have higher operating expense ratios than the larger open-end companies," he pointed out. At the present time, out of a total of something over \$10 billion in assets for all investment companies, the closed-end type has total assets of approximately \$1.3 billion. The price of closed-end investment company shares on the open market will vary with the law of supply and demand. In other words, this price may fluctuate considerably from the underlying market value of a company's assets. In the matter of diversification. quite a few closed-end companies concentrate in special situations and do not have a broad diversification of stocks in their portfolios.

AN EXPLANATION OF MUTUAL FUNDS

"The open-end investment companies are more popularly known as 'mutual funds' and are of relatively recent origin. The pioneer company and originator of the open-end management company concept is Massachusetts Investors Trust, which was established early in 1924. The founding of Massachusetts

Investors Trust brought to the investment company field a genuinely new and different feature—the 'open' capital structure.

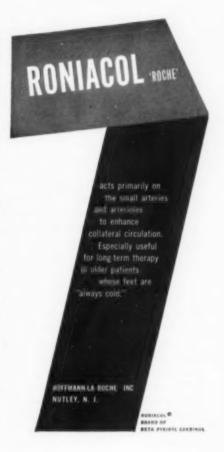
"This basic idea, like many other basic concepts, was relatively simple but it eventually had profound effects. For one thing, the open capital structure meant that shares would be offered continuously to meet the demand of investors. The concept also provided a redemption feature whereby this new type of investment company would repurchase its shares at approximate net asset value. There can be no guarantee, of course, that the amount received by an investor on disposal of his shares will exceed the price paid for the shares.

"These features plus the diversification of investment risk through the ownership of many different securities and professional management of the investment portfolio are the foundation stones of the entire open-end investment company business as it exists today."

In the early years, especially from 1924 to 1930 and even from 1930 to 1940, there were relatively few of these mutual investment companies. Today there are more than 130 of them with total net assets of approximately \$9 billion. The reason for this growth has obviously been that the open-end or mutual fund type of investment company has filled a genuine need. It has offered features and services to both small and large investors which previously were not available.

The capital structure of open-end investment companies is relatively simple. There is only one class of stock. Shares may be purchased in any amount. The shares are sold at net asset value plus a sales charge.

A mutual fund or open-end invest-(Vol. 85, No. 7) July 1957 for prolonged vasodilation in chronic circulatory disorders



ment company is a medium of investment and not just another security. It offers diversification of risk through beneficial ownership in a broad list of securities in a single certificate of ownership. Investors purchase these shares to secure professional management, and the results obtained from the investment are in direct relation to the over-all performance of the securities in the company's portfolio.

Investment companies are regulated by government authorities. The basic Federal legislation affecting them is the Investment Company Act of 1940. This is administered by the S.E.C., supplemented by voluntary regulation pro-

vided by the National Association of Security Dealers. Sales, sales promotion, and advertising practices must conform to a set of regulations known as the "SOP" or Statement of Policy. publication advertising, for example, "SOP" regulations permit at the most a relatively brief statement of the company's basic investment objectives, the reader being referred to the company's official prospectus for additional information. Every sales presentation must include the providing of a prospectus to the investor. The open-end companies are additionally regulated in the various states by the state "Blue Sky" commissioners.

TYPES OF FUNDS

Mutual funds or open-end companies are of several different types with differing objectives. For example, balanced funds, which ordinarily invest in bonds, preferred stocks, and common stocks in varying proportions, usually provide a greater degree of market and income stability. Common stock funds ordinarily produce higher income and also growth of principal with the nation's economy. Some funds seek to attain capital appreciation over a period of years. Of these specialized funds there are a number of varieties.

Common stock funds account for possibly two-thirds of the total assets of all open-end investment companies. As an example of such an investment company's portfolio, that of Massachusetts Investors Trust can be mentioned. Its portfolio contains the stocks of about 140 companies in 22 different industry classifications. The three main classifi-

cations of stocks are:

- growth industries for capital appreciation purposes;
- defensive industries for steady income;
- eyclical industries for higher income. The proportionate amounts of stocks of these types held are changed from time to time in line with prospective economic conditions.

"Open-end investment companies in the past quarter century or more have won a definite place in the nation's economy," Mr. Whitney says. They have assisted in spreading the ownership of American industry on a sound basis. Whatever influence they have had on equity markets has been constructive. For the most part investment companies are restricted by both charter provisions and regulation in providing new venture capital, but through the exercise of rights, or otherwise, funds received from the sale of openend shares to an extent are placed in new stock issues of established com-

SYSTEMATIC INVESTING

A rather new and attractive feature among mutual investment companies is plans for systematic investment. In the case of MIT this plan is called the "Cumulative Investment Program."

A Cumulative Investment Program has a number of uses. For example,

 planned investing for retirement, for the education of children or for any future purpose;

a convenient and economical way to put surplus dollars to work productively;

a way to have dividend income automatically reinvested in additional shares for the purpose of building up the size of an investment account more rapidly.

Under a Cumulative Investment Program, an investor may purchase shares monthly, quarterly, or at any interval he chooses. Dividends and other distributions are reinvested on the dates of payment. No extra charge is made to the investor for participation in such a program, and it may be interrupted or terminated at any time without penalty. The many advantages of a Cumulative Investment Program are attracting more and more investors.

"Nothing dogmatic can be said about the best methods of obtaining financial and investment advice," he points out. The requirements of each investor are different, and consequently there is no one ideal program for all.

"Among the essential principles of prudent investment are the following. Before investing, home ownership should be assured, and a sensible program of life insurance protection should be provided for. The latter is particularly important for younger men with growing families.

"Every prospective investor should also have an amount of liquid savings adequate to provide for emergencies. The media for these savings are savings banks, government bonds, and municipal bonds, if the tax bracket justifies the last-mentioned.

"As to a practical program of investing, although there can be no assurance as to future results, common stocks in the past have been a way to hedge, against inflation and to participate in the national economic growth. There are, however, many problems and hazards in common stock investment.

"As for professional investment counsel in the management of investment funds, this method is best suited to investors of substantial means because of the cost factors and the amount of fund necessary to provide adequate diversification.

"Investing in the share of mutual funds or open-end investment companies is a method of providing for future retirement or for estate building purposes which should be investigated. Today there are approximately 2,700,000 shareholder accounts in these companies. This figure compares with a few thousand shareholders a little more than 30 years ago, and this astonishing growth has been the result of service to shareholders."

FUND ASSETS CONTINUE RISE

Mutual funds are sometimes regarded as middle men, in that they furnish a convenient method for an investor to stake his claim on the earnings of many corporations without buying the actual shares of the company. The fund buys shares of many enterprises, and the investor buys the mutual fund share, thus participating, in a small way, in the earnings of many.

It is easier for a fund to distribute its shares when the stock market is rising. Consumers rush to buy when prices are rising; they tend to hold back when they are receding. If a householder sees a rug she wants, and the price is \$1,000, and later she sees it marked down to \$950, she is apt to delay, think-

ing there may be a further cut to \$900. But if the price is raised to \$1,050 she may think she had better act quickly.

The same psychology prevails in stocks. There are more buyers on the way up than on the way down. Consequently, when the stock market encountered irregularly lower prices earlier this year, funds had to accept some liquidation from investors who wanted out.

By the end of April, however, they were back in stride. The National Association of Investment Companies reported that the 136 open-end (mutual fund) members of its Association had assets of \$9,463,314,000 at the end of

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Each tablet contains ethisterone (Progestoral®), 15 mg; hesperidin complex, 175 mg; ascorbic acid, 175 mg; sodium menadiol diphosphate (vitamin K analogue), 2.0 mg; dl, alpha-tocopherol acetate, 3.5 mg. In packages of 30 tablets.

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Of renewed importance in the prevention of abortion, 1-4 luteal hormone prepares the uterus for implantation and maintenance of the conceptus. Its specific uterine relaxant action reduces the excessive uterine irritability so often found in habitual aborters. Ethisterone is the orally effective form of luteal hormone,

Hesperidin and Vitamin C

Capillary permeability and fragility may be involved in habitual abortion. 5-0 Since bioflavonoids, particularly hesperidin, acting conjointly with vitamin C, foster capillary integrity, these agents have been employed in habitual aborters to protect decidual vessels, with high fetal salvage as a result. 6-8

Vitamin K

The value of vitamin K during pregnancy to prevent bleeding tendencies in both mother and infant is long-established. In addition, it appears that vitamin K may be of value in habitual aborters, 6,10,11 to prevent frequently encountered hemorrhagic diathesis,7 particularly if membranes rupture prematurely or cervix obliterates and dilates early.12

Vitamin E

Alpha-tocopherol is considered by many obstetricians to be part of the standard therapeutic regimen for poor-risk obstetrical patients, as an extra precaution which has often proven of value. Alpha-tocopherol acetate, particularly, has been credited with improving fetal salvage in many nutritionally inadequate women, 13,14

To Help Preserve Pregnancy In the Abortion-Prone Patient

ORGANON INC. Orange, New Jersey



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that month, up from \$9,105,048,000 at the end of March and compared with \$8,615,458,000 a year previously.

April's redemption increased, but were offset by new purchases. The month's redemptions were \$37,181,000 against \$31,706,000 the previous month, while purchases came to \$112,989,000 compared with \$111,709,000 the previous month. The increase in sales, plus the better stock market, lifted the total of assets of the member funds.

ONE FUND SWINGS TO COMMON STOCKS

Tri-Continental Corporation, the country's largest closed-end investment company, had a policy for about a year of investing all its new money in bonds and preferred stocks.

A few months ago it resumed its former policy of placing a part of such new money in carefully selected common stocks.

Francis F. Randolph, president and chairman, explained that when the company got about 30 per cent of its assets in senior securities, it decided it had enough.

Tri-Continental obtains new money when its warrants are exercised by the respective holders of these "options." The selection of common stocks is based on the prospects of individual companies, rather than on the outlook for any one industry as a whole, he explained.

FUND FOR TAX EXEMPTS

There is a mutual fund for every purpose and for every pocketbook, the fund managers tell us. Until recently however, there was no such fund devoted to tax exempt bonds. These bonds, favorites with individuals in the upper income tax brackets, were not normally found in funds, because of a belief their favored tax treatment could not be passed on to the owner of the mutual fund.

This is due for a change. The Wall Street banking firm of Ira Haupt & Co., together with its lawyers, Davis, Polk, Wardwell, Sunderland & Kiendl, has succeeded in creating the first trust device whereby an investor, for a comparatively small amount, can buy a proportionate interest in a portfolio of tax exempt and can have this tax exempt status of the interest payments passed through to him.

RECORD HIGHS FOR SOME FUNDS

Total net assets, the number of shares outstanding and the number of shareholders of Television-Electronics Fund, Inc. reached a new all-time record at the end of the first half of the current

fiscal year, Chester D. Tripp, President, reports.

On April 30 resources of the Fund totalled \$148.7 million, an increase of 15.2% over the level of assets a year earlier. The number of shares outstanding registered a similar percentage gain, rising to the record total of 12,218,644 shares.

Total net assets of Energy Fund reached a record high of \$4,021,770 in May, up 55.9% from \$2,579,156 on Sept. 30, 1956, the end of the fiscal year. In the same period the net asset value per share increased 24.4%, rising from \$143.28 to \$173.18, while the Standard & Poor 500 stock average increased 3.3% from 45.35 to 46.83.

Energy Fund is an open-end investment company with shares selling at net asset value (without sales charges of any kind) and is managed and distributed by Ralph E. Samuel & Co. of New York.

Boston Fund, one of the largest mutual funds in the country, reported total net assets of \$147,033,758 at the close of the first quarter of its present fiscal year on April 30, or \$15.90 per share. This compares with total net assets of \$135,440,283 or \$15.25 per share, at the close of its previous fiscal year last January 31. During the quarter, the number of shares outstanding increased from 8,879,447 to 9,245,818.

FUNDS WILL GROW TOO

If the economy is going to go ahead, as we all assume, then the mutual funds will not be far behind. In fact they may be out in front.

Just how much they will grow is predicted by Arthur Wiesenberger, head of the investment firm bearing his name, and author of "Investment Companies." This book, the seventeenth annual edition of which was recently published, is frequently referred to as the "Bible" of the business.

In connection with its issuance Mr. Wiesenberger predicted that today's ten billion dollars investment company industry will grow in ten years to forty billion dollars in assets, and will have about 5,000,000 investors owning mutual fund shares.

In the recent past mutual fund assets have doubled in about every three and a half years. Three years ago, when he predicted a total of ten billion dollars by 1960, he was accused of being visionary. As it turned out he was overly conservative, because the figure was reached this year, three years ahead of schedule.

FIVE PER CENT OF TOTAL FUND ASSETS IN RAILS

Railroad stocks have not been the most popular with stock market investors, and much the same can be said of managers of investment company portfolios. The National Association of Investment Companies reported recently that about five per cent—\$565,435,-

000-of total net assets of investment companies are in rail securities.

Late in 1954 the commitment was 8 per cent.

The Association compiled the table on the opposite page to show the favorites among the carriers.

RAILROAD PORTFOLIO

of Investment Companies

Number of Companies Holding Each Type of Security

TEN LARGEST RAILROAD HOLDINGS

\$ Value (000's) \$45,380	44,862	31,546	30,084	29,299	27,946	25,061	23,796	21,886	18,051
	-								
-	.9								
361	Sale.								
	-							660	
Southern Reilway Comp	Atchison, Topeka & Sant	Chesapeake & Ohio	nois Central	Missouri Pacific	Southern Pacific	Union Pacific	Seaboard Air Line	N. Y. Chicago & St. Loui	Great Northern Railway

COMMON STOCKS (top ten)	No. of Holders	Atchison, Topeka &	Illinois Central 23	Union Pacific Caso 20	Seaboard Airline 25 Great Northern Railway 24	N. Y., Chicago & St. Louis 19 Southern Pacific	Norfolk & Western 14
	\$ Velue (000's) \$5.200	4,105	3 016	3,055	2,756	2,727	2.357
PREFERED STOCKS [top ten]	No. of Holders Baltimore & Ohio	Chicago & Great Western 8 Gulf Mobile & Ohio	Atchison, Topeka & Santa Fe	St. Louis & San Francisco 7	Chicago, Milwaukee	Virginian Railway Pittsburgh, Fort Wayne &	Chicago 2 Southern Reilway 12
Value	\$26,930 13,291	10,544	9,687	8,731	5,565	5,543	5,257
BONDS (top ten) No. of	Missouri Pacific 29 N. Y. Central	Erie Railroad 10	Baltimore & Ohio 19 Chicago, Milwaukee.	St. Paul & Pacific 16	N. Y. Chicago & St. Louis 7	N. V., New Haven & Harfford	Cleveland, Cincinnati, Chicago & St. Louis 7

29,742 29,742 29,637 24,466 23,094 17,922 16,321 16,119

Source: National Association of Investment Companies,

New Evidence on Estrogens for Control of B LEEDING

Now, for the first time, a new study defines the effect of intravenous estrogens in increasing the coagulability of the blood, and confirms the empirical success of estrogens in controlling spontaneous hemorrhage.

Within 15 minutes after administration of "PREMARIN" INTRAVENOUS, three important factors of the blood coagulation mechanism were affected:

prothrombin concentrations were increased
 accelerator globulin levels were increased
 antithrombin levels were decreased

In spontaneous hemorrhage, use of "PREMARIN" INTRAVENOUS produces prompt cessation of bleeding in most cases. The administration of one 20 mg, injection has resulted in hemostasis in more than 80 per cent of some 668 cases reported.

To date, over 400,000 injections of "PREMARIN" INTRAVENOUS have been made without any reported incidence of toxicity or side effects.

"PREMARIN" INTRAVENOUS has been used effectively to control spontaneous bleeding as in epistaxis, post-tonsillectomy and adenoidectomy hemorrhage, as well as preand post-operatively to minimize bleeding after surgery. "PREMARIN" INTRAVENOUS may be used adjunctively with other therapy.

"PREMARIN" INTRAVENOUS (conjugated estrogens equine) is supplied in packages containing one "Secule" providing 20 mg., and one 5 cc. vial sterile diluent.

References will be supplied on request to:

AYERST LABORATORIES
22 East 40th Street, New York 16, N.Y.

DRUG SALES CONTINUE CLIMB

Reports of the drug companies for the first quarter of 1957 show that the upward sales trend of last year has persisted, says The Value Line Investment Survey published by Arnold Bernhard & Co. Since wide profit margins have been maintained in most cases, earnings have climbed along with sales.

New products continue to flow from drug company laboratories. Research has proven competitive as well as productive. Important ethical drug categories are subject to fierce price competition. Prolonged and severe price declines have taken place as more efficient manufacturing procedures have been developed. The risk of product obsolesence is high. In the proprietary field, moreover, the large sales promotion outlays necessary to introduce new products do not always pay off.

Over the next 3 to 5 years, potentialities for further growth in sales of the drug industry remain impressive, the Survey concludes. Gains in two heavy drug-consuming sections of the population—the young and the old—are relatively rapid. The American public has come to rely on medicines for small discomforts as well as in major illnesses—(a break-through may be close in the field of the "common cold"). Already important, foreign markets provide opportunities for further growth as living standards improve abroad.

A LOOK AT BANK STOCKS

In the normal course of events, when an investor looks around for an attractive stock to buy, he turns to the tables of transactions on our major exchanges.

94a MEDICAL TIMES

Rauwiloid®

A Better Antihypertensive

... because among all Rauwolfia preparations Rauwiloid (alseroxylon) is maximally effective and maximally safe ... because least dosage adjustment is necessary ... because the incidence of depression is less ... because up to 80% of patients with mild labile hypertension and many with more severe forms respond to Rauwiloid alone.

A Better Tranquilizer, too

... because Rauwiloid's nonsoporific sedative action relieves anxiety in a long list of unrelated diseases not necessarily associated with hypertension... without masking of symptoms... without impairing intellectual or psychomotor efficiency.

Dosage: Simply two 2 mg. tablets at bedtime. After full effect one tablet suffices.

Best first step when more potent drugs are needed

Rauwiloid is recognized as basal medication in all grades and types of hypertension. In combination with more potent agents it proves synergistic or potentiating, making smaller dosage effective and freer from side actions.

Rauwiloid*+Veriloid*

In moderate to severe hypertension this single-tablet combination permits long-term therapy with dependably stable response. Each tablet contains 1 mg. Rauwiloid and 3 mg. Veriloid. Initial dose, 1 tablet t.i.d., p.c.

Rauwiloid +

Hexamethonium

In severe, otherwise intractable hypertension this single-tablet combination provides smoother, less erratic response to hexamethonium. Each tablet contains 1 mg. Rauwiloid and 250 mg. hexamethonium chloride dihydrate. Initial dose, ½ tablet q.i.d.

Riker LOS ANGELES

Names such as duPont, General Motors, United States Steel, American Telephone, and hundreds of others appeal to him. He knows they are sound, and probably he is intimately acquainted with their products or services.

One service with which he and his family have daily contact is his bank. Yet he is less inclined to invest in its shares than in the shares of the company that makes his automobile, his washing machine or grinds his coffee.

One reason may be that bank stocks are not listed on the major exchanges, with a few unimportant exceptions. They are traded in on the over-the-counter market. Newspapers carry the quotations in small type, known as agate type, and the prices shown are a bid and asked, not the price of actual transactions. They represent the price someone is willing to pay for the share, and the price at which someone is ready to sell.

The market for bank stocks is an active one indeed, and at present prices many are quoted at levels which look like bargains, especially if when compared with blue chip industrials. Generally speaking, bank stocks are selling at a much lower price/earnings ratio than are the shares of our big manufacturers.

The firm of R. W. Pressprich & Co. has issued an informative 18-page brochure on "The Banking Industry" which may prove an eye-opener for the prospective investor. Prepared by its security analyst, Douglas J. M. Graham, it notes changes that have taken place in the last few years in the banking business and outlines things for the investor to watch.

Perhaps you didn't know there are twenty-one different types of financial institutions in the United States and that their total assets run to \$600,000,000. 000, or a fifth of our economy. Of the twenty-one, the commercial banks represents by far the largest single concentration of assets.

A chapter in the study that will be particularly interesting to the investor is the one dealing with the significant indices which can foreshadow future trends in bank earnings.

The first is the trend of deposits, the life blood of a bank. Changes in the economy, particularly geographical shifts, closely determine the volume and distribution of deposits which, in turn, largely determine the volume of loans and investments that commercial banks can make.

These loans and investments are the principal sources of the earnings of banks, and it is within the framework of deposits that one must view other inportant factors affecting earnings, Mr. Graham notes. These include interest rates, loans, and investment in securities.

The study emphasizes that "not interest rates and loan volume alone, but the sum of total loans and investment is one of the most important factors in bank earnings." It adds that when three factors—investments, loans and interest rates all decline, and at the same time, then we get a decrease in the earnings of banks. When all three factors move up, as they did in 1955 and 1956, earnings improve,

Other factors affecting earnings of banks are operating expenses and nonrecurrent income and expenses, which the review discusses. A third is management, especially important in this field, as banking is a service industry. Earning power is perhaps the best way to judge the performance of management.

Earnings, more than any other one factor, determine the price of common

Investment Services

Upon request you may have a booklet that gives a comprehensive digest of financial information relative to all leading stocks listed on the New York Stock Exchange. American Stock Exchange and many that are traded in the over-the-counter market issues. Just write a card or note for your free copy to Cosgrove, Whitehead & Gammack, members of the New York Stock Exchange and American Stock Exchange and Registered Investment Advertisers, 44 Wall Street, New York 5, New York.

T. ROWE PRICE GROWTH STOCK FUND, INC.

Dept. P, 10 Light St., Baltimore 2, Md.

OBJECTIVE: Long term growth of prior cipal and income.

OFFERING PRICE: Net asset value per share. There is no sales load or commission.

Write for Prospectus

STOCK STUDIES AVAILABLE

Wall Street firms continue to keep the investing public well supplied with corporate literature. They contain factual information and usually words of advice as to whether the securities warrant purchase or sale. A selected list of recent publications of this nature follows. The verious companies will be glad to send you any, if you mention this column and journal.

COMPANY

Eastern Corp. Scott Paper Co. Int, Business Machines Amer. Machine & Foundry Continental Can Co. Rayonier, Inc. Kimberly-Clark Corp. American Optical Co. Crown Zellerbech Colorado Interstate Gas Northern Pacific Office Equipment Industry Clark Controller Glidden Co. Eli Lilly & Co. Deere & Co. U. S. Rubber Co. Carpenter Steel Co. Dictaphone Corp. Newmont Mining Corp. Lily-Tulip Cup Corp. American-Marietta Co. Fischer & Porter Co. Fedders-Quigan Amereda Petroleum Parke Davis **Electronics Industry** Amer. Machine & Foundry Copperweld Steel Co. Walworth Co.

FIRM

Peter P. McDermott & Co. Merrill Lynch, Pierce, Fenner & Beane Hayden, Stone & Co. Eastman Dillon, Union Securities & Co. Shearson, Hammill & Co. Harris, Upham & Co. Thomson & McKinnon Thomson & McKinnon Dean Witter & Co. W. E. Hutton & Co. Fahnestock & Co. Fahnestock & Co. Emanuel, Deetjen & Co. Josephthal & Co. Hemphill, Noyes & Co. Stanley Heller & Co. Carl M. Loeb, Rhodes & Co. H. Hentz & Co. Reynolds & Co. Paine, Webber, Jackson & Curtis Bache & Co. Drozel & Co. Morris Cohon & Co. J. R. Williston & Co. L. F. Rothschild & Co. W. E. Burney & Co. E. F. Hutton & Co. Jas. H. Oliphant & Co. Amott, Baker & Co. Butcher & Sherrerd

N. Y. ADDRESS

42 Broadway 70 Pine St. 25 Broad St. 15 Broad St 14 Wall St. 120 Broadway II Wall St. II Wall St. 14 Wall St. 14 Wall St. 65 Broadway 65 Broadway 120 Broadway 120 Broadway 15 Broad St. 30 Pine St. 42 Wall St. 72 Wall St. 120 Broadway 25 Broad St. 36 Wall St. 30 Wall St. 42 Broadway 115 Broadway 120 Broadway 11 Wall St. 61 Broadway 61 Broadway 150 Broadway 1500 Walnut St. Phila., Pa.

stocks, and those of banks are no exception. In the case of banks, they make profits by the use of deposits as well as stockholders' money. They thus obtain a large leverage in income, but at the same time they obtain a degree of safety because of conservative investment restrictions that encompass all banking operations.

Banking earnings have shown a high degree of growth and stability. The trend perhaps lacks the glamor, and the interest, aroused by the big swings in earnings and changes in fortunes of industrial corporations, but it is a record of uninterrupted year to year progress which is so important for private and institutional investors alike.

Two of several things watched by Wall Street investors are growth of earnings, and price/earnings ratios. The study presents a table on this subject. It notes that twenty leading banks have scored well on earnings growth, as against selected chemicals, oils and paper stocks, but their shares are selling today as a relative low price/earnings ratio.

INVESTORS AND TOTAL ASSETS ON THE RISE

The dollar value of all shares listed on the New York Stock Exchange advanced 89.7 per cent in the last four years, according to The National Association of Investment Companies.

Over the same period, the number of

FOR



PROPHYLAXIS

when exposure is known or suspected when there is too little time for immunity to develop after vaccination when epidemics are present or threatened

DON'T FORGET HYLAND POLIOMYELITIS IMMUNE GLOBULIN

(HUMAN) (GAMMA GLOBULIN)



hyland laboratories 4501 colorado blvd., los angeles 39, calif. . 252 hawthorne ave., yonkers, n.y.

98a

MEDICAL TIMES

Introducing...

Two-dimensional treatment

of the menopause

The menopause is a two-dimensional

DIODICITE . . . Now for the first time, both manifestations of the menopause—psychologic and physiologic—can be comprehensively managed with one therapeutic agent: "Milprem".

In the past, many workers who have recommended estrogen replacement in the menopause have also noted the necessity of supplementary treatment for the symptoms of climacteric labile emotionality.^{1–6} Adams,⁵ for example, has referred specifically to "typical anxiety attacks," and Donovan,⁶ generally, to the characteristic over-all "psychologic stress."

"Milprem"

is a two-dimensional

medication - - - The Need For Miltown: The psychologic manifestations of the menopause are effectively managed with Miltown. An impressive literature in recent years has confirmed Miltown's

clinical value as a proven tranquilizer.

Selling: "The syndrome in which it [Miltown] is of most value is the so-called anxiety neurosis, especially when the primary symptom is tension."

Borrus: "Miltown proved most effective in anxiety and tension states through a lessening of tension, reduced irritability and restlesaneas, more restful sleep, and generalized muscle relaxation."8

The Need For Conjugated Estrogens (equine): It is now 15 years since "Milprem's" estrogen replacement component—conjugated estrogens (equine)—was reported by Goodall as successfully treating "the physical signs of the menopause..." Since then a vast bibliography has accumulated.

Hamblen: "[A] natural estrogen of our choice."10

Shorr: "On the basis of cost, freedom from side effects or toxic effects and ease of administration"—an estrogen of choice.¹¹

"Milprem"

-MILTOWN* + CONJUGATED ESTROGENS (EQUINE)
-is therefore rational and comprehensive menopausal therapy.

"Milprem"

MILTOWN®+ CONJUGATED ESTROGENS (EQUINE)

is two-dimensional menopausal therapy...

Because it combines for complementary action
 Miltown* for emotional balance with
 Conjugated Estrogens (equine) for hormonal balance

- Because it replaces half control with full control
- Because one prescription manages both the psychic and somatic symptoms

Supplied: Bottles of 60 tablets.

Each tablet contains:

MILTOWN® (meprobamate, Wallace)

2-methyl-2-n-propyl-1,3-propanediol dicarbamate
U. S. Patent No. 2,724,720

Conjugated Estrogens (equine)
Licensed under U. S. Patent No. 2,429,398

Dosage: One tablet t.i.d. in 21-day courses with one week rest periods. Should be adjusted to individual requirements.

Referencex:

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Additional selected references on request.

investors in publicly owned corporations has jumped 33 per cent and total shareholder accounts in both mutual and closed-end investment companies increased 65.7 per cent.

In early 1952, the Association said,

market value of all New York Stock Exchange listings was \$109,484,000,000 —in 1956 it amounted to \$207,699,000,-000. In 1956, The Exchange boasted a total of 3,630,000 stockholders, compared with 6,490,000 four years before.

THE STEEL STOCKS

Shares of steel companies have been attracting more attention in the last few months. The firm of Shearson, Hammill & Co. believes the group will continue to supply highly satisfactory in-

vestments over the next several years.

It has prepared the table below of a few of the leaders, emphasizing that forecasts of 1967 earnings must be considered as highly tentative.

BOND RETURN LOWER

Prevailing high interest rates have added to the difficulties of investors in bonds. Manhattan Bond Fund, Inc., a mutual fund investing exclusively in bonds, reports a per-share net asset value of \$7.14 on April 30, end of the

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		EARN	INGS	CASH			
(AND RECENT PRICE)		LATEST 12 MOS.	1957 €	1957 E	OBLIG.	DIVD.	TIELD
ARMCO	(55)	\$5.51	\$5.50	\$8.85	\$4.72	\$3.00	5.4%
BETHLEHEM	(46)	4.06	4.50c	7.00c	9.20	2.40	5.2
CRUCIBLE	(32)	3.42	3.75	7.00	7.70	1.60	5.0
INLAND	(87)	9.48	10.00	15.00	23.10	4.25a	4.9
JONES & LAUGHLIN	(51)	6.58	7.00	13.75	24.21	2.50b	4.9
KAISER	(59)	7.96	8.00	16.00	48.73	0.40	0.7
NATIONAL	(73)	7.00	7.50	13.70	14.90	4.00	5.5
PITTSBURGH	(28)	2.90	4.00	11.35	39.80	d00.1	3.6
REPUBLIC	(54)	6.02	6.50	8.20	2.63	3.00	5.6
U. S. STEEL	(64)	6.21	7.25	12.25	11.25	3.00	4.7
WHEELING	(55)	7.79	7.25c	14.00s	41.80	1.40	6.2
YOUNGSTOWN	(109)	12.70	13.00	25.50	28.90	5.00	4.6

FIGURED ON A PER SHARE BASIS

- a Including extra b Plus Stock E Estimated
- E Allowing for full conversion of convertible bonds outstanding.

she needs support, too
during pregnancy and throughout lactation

NATABEC

VITAMIN-MINERAL COMBINATION

NATABEC Kapseals supply vitamins and minerals in a carefully balanced formula that helps to provide nutritional support for the gravida and for the nursing mother. As a dietary supplement, NATABEC helps to promote better present and future health for the mother and for her child.

docage As a dietary supplement during pregnancy and throughout lactation, one or more Kapseals daily. Available in bottles of 100 and 1,000.

PARKE, DAVIS & COMPANY

DETROIT 32, MICHIGAN



-



first half of the 1957 fiscal year. This compares with a figure of \$7.38 at the beginning of the period.

Additions to the fund's holdings during the six months ended April 30 included: The Baltimore & Ohio R.R. Co., First Consolidated Mtge. Series B, 4's, 1980; Dresser Industries, Inc., Convertible Subordinated Debentures, 41/8's, 1977, and Pioneer Natural Gas Company, Sinking Fund Debentures, 5½'s, 1977.

The following issues were eliminated: Chicago, Milw., St. Paul & Pacific R.R. Co. General Mtge. Income, Series A, 4½'s, 2019, and the New York, New Haven & Hartford Railroad Co., First & Ref. Mtge., Series A, 4's 2007.

CAUTION ON WARRANTS

Don't be misled by the "exaggerated claims about common stock warrants," the New York Stock Exchange warns. They are highly speculative and in most cases investors would do better to buy the common stock itself or even convertible debentures.

A warrant is an option to buy common stock at a specified price from the company which issues the warrant. It's roughly equivalent to an option to buy a piece of real estate at a certain price.

Writing in the official Big Board Magazine, The Exchange, Eldon A. Grimm, author of a daily market letter, said "in the case of a poorly situated stock, warrants can be exceedingly risky, even for experienced traders.

"Unwise speculation in a 'poor' stock can bring heavy losses, but the rate of loss in warrants, whether 'poor' or 'good' can be several times as disastrous."

Grimm wrote that ads in newspapers and financial magazines play up claims of fantastic profits that might have been made in warrants. But he explained there's another side to the story.

In the early stages of major bull markets warrants often move upward anywhere from 2 to 20 times as rapidly on a percentage basis as do the common stock they represent. That's because of a leverage factor.

But the same leverage also works in reverse when the market goes down.

He cited an example of the former warrants of Universal Pictures Corp. (to purchase stock at \$10 a share) which melted away from \$39 each in 1945 to \$1.50 three years later during a sinking spell of the stock.

DIVIDEND-\$500

There is a stock available that will pay you about \$500 a year in dividends. You can get it, if you wish to invest between \$14,000 and \$16,000.

It is Christiana Securities, traded in over-the-counter, and quoted daily in the newspapers. It has become more active recently, since the Supreme Court's ruling that duPont's big holdings of General Motors are in violation of the law.

Christiana originally was a private holding company for members of the duPont family. In 1934 there were only 132 stockholders, with more than three-



"Frank! We really missed you!"

You recall Frank . . just a while ago suspicious and resentful of his associates . . . convinced they were all against him. Gradually he became trigger-sensitive to criticism, incensed over his wife's supposed infidelity, full of hypochondriacal complaints and fears.

Because of this alarming personality change,
Pacatal was instituted: 25 mg. t.i.d.
Pacatal therapy saved this executive from an imminent breakdown.

For patients on the brink
of serious psychoses, Pacatal provides
more than tranquilization. Pacatal has
a "normalizing" action; i.e., patients
think and respond emotionally in a more
normal manner. To the self-absorbed
patient, Pacatal restores the warmth of human
fellowship . . . brings order and clarity to
muddled thoughts . . . helps querulous older people
return to the circle of family and friends.

Pacatal, in contrast to many phenothiazine compounds and other tranquilizers, does not "flatten" the patient. Rather, he remains alert and more responsive to your counselling. But, like all phenothiazines, Pacatal should not be used for the minor worries of everyday life.

Pacatal has shown fewer side effects than the earlier drugs; its major benefits far outweigh occasional transitory reactions. Complete dosage instructions (available on request) should be consulted.

Supplied: 25 and 50 mg. tablets in bottles of 100 and 500. Also available in 2 cc. ampuls (25 mg./cc.) for parenteral use.

back from the brink with

Pacatal'

WARNER - CHILCOTT

100 YEARS OF SERVICE TO THE MEDICAL PROFESSION

quarters of them members of that famous clan.

There were 2,000 stockholders in 1940 and today about 4,000.

The bulk of the company's holdings include 12,199,200 shares of duPont and 535,000 shares of General Motors.

An over-the-counter broker reports

that "considering the price of the stock, there is a surprising amount of activity in it." He points out that numerous institutional investors, such as banks and colleges, switch back and forth from Christiana to duPont as often as three times a year to take advantage of price changes.

WOOING STOCKHOLDERS

Corporations like to have stockholders, the more the better. And they spend money to get them, and to keep them. As a corporate activity, stockholders relations in the last few years have attained virtual equal rank with labor relations and community relations.

Some companies permit stockholders to buy their products at a discount. Others give away products at annual meetings. Continental Can once gave each stockholder a garbage can. Revlon gave cosmetics.

Almost all companies feed their stockholders at annual meetings. Many maintain fulltime staffs to greet visiting stockholders, take them on plant tours and buy them lunch. The Grace Line runs special cruises to the Carribean. Stockholders pay the regular fare but get red carpet treatment and entertainment both on board and in port.

The New York Central Railroad runs special low-cost trains to Albany for its annual meeting, and this year the Chesapeake & Ohio Railroad conducted its annual meeting on a merchandise pier. Stockholders were then taken on a boat tour of railroad installations along the bay and on a low-rate excursion to the Jamestown, Virginia Festival.

A few years ago many companies treated their stockholders like an unemployed brother-in-law who came for a week's visit and stayed a year.

LOST-\$500 OR \$1,267,500?

Back in 1896 someone bought a few shares of the old Texas Pacific Trust, which became Texas Pacific Land Trust. He paid \$500, and received certificate No. 390. Neither he nor the certificate has been located since.

In the interim the State of Texas, the great State of Texas that is suh, has been producing a quantity of oil. Texas Pacific Land benefited thereby. Once it was split 100 for 1.

That old certificate, which cost \$500, now represents 40,000 shares of TXL Oil, 10,000 shares of the present Texas Pacific Land Trust, both listed on the Big Board, plus about \$150,000 in accrued dividends, or a total estimated value of \$1,267,500.

Better look through that old trunk of grandpop's.

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For the hyperacidity that is so common on the American scene, ALUDROX gives acid-hungry therapeutic action without systemic penalties. ALUDROX combines reactive alumina gel with milk of magnesia in a rational proportion of 4:1. It is a balanced formula for prompt relief, soothing action, and healing powers—without constipation, acid rebound, or alkalosis.



TABLETS

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Vitamins Essential to the Production of Antibodies

Experiments with rats fed an adequate purified diet except for one of the vitamins, pantothenic acid, puridoxine, or biotin or except for the amino acid tryptophane, showed that each of these factors is essential for the production of antibodies during the primary phase following an injection of diphtheria toxoid. Control rats were fed the same diet except that it was supplemented with the vitamin or amino acid under study. When one of these factors was missing from the diet of the rats during the primary phase, a satisfactory ananestic (booster) response to diphtheria toxoid was not obtained, according to Dr. A. E. Axelrod of the Univ. of Pittsburgh in a presentation to a symposium at the meeting of the National Vitamin Foundation in New York City, March 5, 1957,

Operation P D Q

At Leech Farm Road Veterans Administration Hospital in Pittsburgh, Pennsylvania, an experiment in a return to normal living is underway for the recovering mentally ill patients. The transition from a long-term period of hospitalization to a normal life "outside" constitutes a difficult and sometimes serious problem for these patients. Readjustment must be gradual, therefore, PDQ—Patient Discharge Quar-

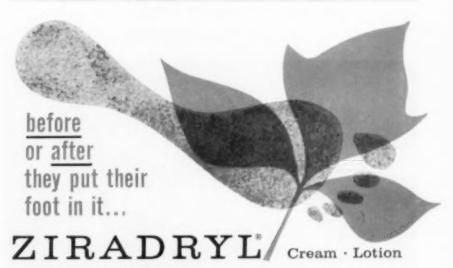
ters. In this section, set aside for the purpose, the patient is no longer under routine hospital supervision, but lives in his own community, and takes responsibility for his day-to-day living even to a job outside of the hospital, or on the hospital staff. All wages received are his to spend as he chooses.

Burns Treated in a Special Unit

The advantages of a special unit where severely burned patients may be treated by a trained team and the type of equipment required are described by A. J. Evans of Basingstoke (England) [British Medical Journal, 1:547 (1957)]. These cases are referred directly by neighborhood practitioners or

are transferred from other hospitals. In the latter cases, if delay is necessitated by a state of shock, suggested early treatment is given by telephone or by a visit from a "burn unit" staff member. Two-thirds of admissions are classed as "fresh cases," those that are received within 72 hours. The remainder are referred after longer periods usually when it is discovered that the severity of the burn had not been recognized at first, and that spontaneous healing will not occur. In these cases, the hospital stay averages 65 days while the fresh cases remain in the hospital for an average of 34 days. Treatment of shock is a first consideration; fluid replacement

-Continued on following page



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(Vol. 85, No. 7) July 1957

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-Continued from preceding page

is essential in all burns covering 18 per cent or more of the body surface. Exposure of the burned areas is the treatment of choice; there is a definite lowering of infection, and less pain and discomfort are experienced by the patient. When circumferential burns are extensive, the patient is placed on a specially constructed frame with polythene sponge in direct contact with the burned areas. Surgical excision and skin grafting in fresh cases are undertaken in about two weeks, but it is emphasized that the procedure is not to be entered upon without a full realization of the seriousness of the situation. A high-protein high-calorie diet is most

necessary. Not only must the negative nitrogen-balance be corrected, but hemoglobin levels must be watched and blood transfusions given to combat impending anemia. Late infected cases will probably require saline baths, closed dressings, and a considerable delay before skin grafting is attempted.

Chlorpromazine for Treating the Mentally III Patient

Through the co-operation of 37 physicians at the Topeka State Hospital, the therapeutic value of chlorpromazine (Thorazine) was studied for the period of one year, and a report has been submitted by Paul E. Feldman [Journal of Clinical and Experimental Psychopathology, 18:1(1957)]. According to the author, an analysis of the data col-

-Continued on page 110s

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a NEWspasmolytic drug

for skeletal muscle spasm

(R)

Brand of Orphenadrine HCI

- · orally effective
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- minimal side actions
- nonsoporific
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Effective

for the Symptomatic Relief of Muscle Spasm in

Parkinsonism of all types Low back pain Herniated intervertebral disc

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Whiplash injuries Torticollis Hemiballism Huntington's chorea Cerebral palsy

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In addition to its spasmolytic effect, Disipal evokes a mildly euphoric response, particularly valuable in the Parkinsonian patient.

Disipal is nonsoporific. Continuous therapy for as long as 44 months produced no serious ill effect, no tolerance.

In 480 cases of Parkinsonism (arteriosclerotic, postencephalitic, and idiopathic), 50 investigators reported good to excellent results in 286 (59%), and fair in 97 (20.2%).

In 120 cases of other types of muscle spasm, good

results were obtained in 59 (49.1%) and fair results in 24 (20.1%), Side effects are minimal.

Dosage: Initially 1 tablet (50 mg.) t.i.d. In combingtion with other spasmolytic drugs, dosage is titrated to meet individual needs.

-Continued from page 108s

lected reflected the investigator's attitude toward the application of drug therapy to these types of cases. However, since this report is based upon rating scales and criteria used by the group, the final results are not excessively colored by the preconceptions of individual physicians. Three hundred twenty-one patients exhibiting schizophrenic reactions, chronic brain syndromes, manic-depressive reactions, involutional psychotic reactions, behavior disorders of childhood, psychoneuroses, and mental deficiency with psychosis were selected as a test group typical of the average state hospital. They had failed to respond to other forms of therapy; were major problems in management; had failed to maintain a

temporarily improved condition, and were exhibiting progressive deterioration. While dosage of chlorpromazine must be individualized, 200 to 250 mg. daily was an average amount. Patients failing to show improvement on this dosage seldom responded to larger doses. The efficacy of Thorazine therapy varied according to the type of illness treated. Fifty-two per cent of all patients with schizophrenic reactions showed moderate to marked improvewith schizoaffective. ment-patients paranoid, or catatonic reactions were most benefited by the therapy. Among manic-depressive patients, 78 per cent of those in the manic phase were moderately to markedly improved; 89 per cent of the patients with involutional psychotic reactions were also moderately to markedly improved. Forty-three per cent of patients with organic brain

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NEO-MAGNACORT

topical ointment

- Continued on page 113a

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outstanding availability, penetration, therapeutic concentrations and potency—without systemic involvement. In 1/2-oz. and 1/6-oz. tubes, 0.5% neomycin sulfate and 0.5% ethanicort (MAGNACORT).

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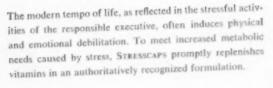
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MEDICAL TIMES



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- 1. Flocks, R. H.: J.A.M.A. 163:709 (Mar. 2) 1957.
- 2. Flocks, R. H.; Marberger, H.; Begley, B. J., and Prendergast, L. J.: J. Urol. 74:549, 1955.

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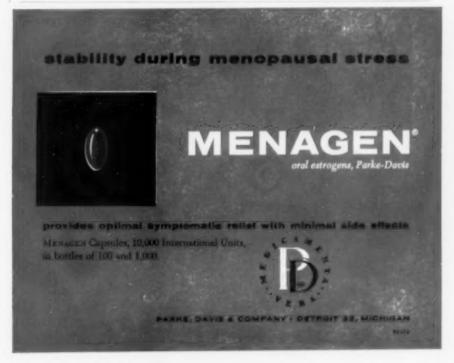
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syndromes showed similar improvement-those with arteriosclerosis responding best. The most conspicuous effect of chlorpromazine therapy is the lessening of hyperactivity and tension. Those behavior traits that stemmed from these symptoms were most affected. However, the drug was of some help in improving almost all symptoms of mental illness. Drowsiness, seen in 23 per cent of the group was the most common side-effect. Parkinsonism, skin rash, and dizziness occurred in less than four per cent of all patients. In general, untoward reactions were mild and did not require withdrawal of the drug. Thorazine may well alter present measures for the management of the acutely disturbed and chronically psychotic patient.

Convulsive Disorders Treated with Metharbital

An earlier report, by the same author, on the effects of metharbital (Gemonil) when administered to 50 patients mostly children has been brought up-to-date. At the conclusion of the first investigation, it was believed that metharbital was a valuable drug in the treatment of epilepsy, being more effective in the organic than in the idiopathic form of the disease. M. A. Perlstein of Chicago [AMA Journal of Diseases of Children, 93:425(1957)] has added 150 cases to his original 50. Since several patients were affected with more than one dis-

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order, 248 diagnostic categories were available for analysis. The dosage, in tablet form, varied from 15 to 180 mg. two to four times daily. No benefit accrued from larger amounts. Metharbital proved to be singularly free of toxic reactions.

The commonest side-effect was somnolence often associated with an unsteady gait. A skin rash occurred in two instances. After the expanded study of the drug, metharbital was found to be of practically no value in reducing the spasticity or tensions of patients with cerebral palsy, or in improving behavior or emotional disturbances. The drug had the unique property of being approximately seven times more effective in seizures associated with organic brain disease than in the idiopathic forms of epilepsy. More than any other drug, Gemonil was found to be most effective in controlling myoclonic spasms of infancy; it benefited 66 per cent of these patients. Benefit was also noted with some focal and Jacksonian spells, and, to a lesser extent, with grand and petit mal seizures. The author considers that the greatest value of metharbital lies in its control of epilepsy due to organic brain disease, and of myoclonic spasms of infancy.

Mictine, a New Nonmercurial Diuretic

Aware of the advantages of a nonmercurial diuretic, the authors, Benjamin Wainfeld and his associates at the Kings County Hospital Center in Brooklyn, New York [Circulation, 15:426 (1957)] conducted a study of the use of a new diuretic, Mictine. Twenty-six clinic patients who had been receiving injections of mercurial diuretics for at least six months, usually requiring one or two injections weekly, were chosen for the test. All diuretic therapy was withheld for an observation period of one month. The patients were then started on Mictine, being given enough medication at a clinic visit to last until the next scheduled visit. According to response, the dosage varied between 0.8 and 1.6 Gm. Half of the group took Mictine on three alternate days of the week and the others took the drug on three consecutive days of each week. Results were rated as excellent in five patients, good in eleven, fair in seven. and poor in three. Sixteen of the patients were adequately controlled, with



See page following 146a for actual clinical demonstration

in intractable hay fever and other severe allergies

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enhanced steroid benefits:

striking relief of intense itching, sneezing, lacrimation, nasal discharge and photophobia

reduced steroid handicaps:

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up to 5 times more potent than hydrocortisone

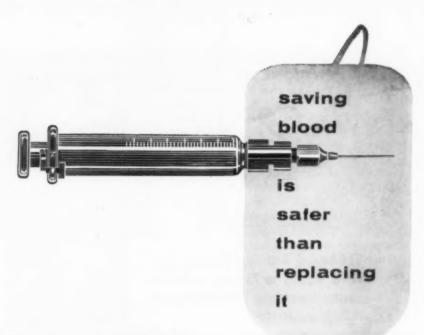
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 Joseph, M.: Control of Hemorrhage - or Transfusion, Am. J. Surg. 87:905, 1954.
 Crisp, W. E.: Editorial; One Pint of Blood, Obst. & Gynec. 7:216, 1956.
 KOAGAMIN, an aqueous solution of oxalic and malonic acids for parenteral use, is supplied in 10-cc. diaphragm-stoppered vials.

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VLEM-DOME is Your Modernized, Supportive Topical Treatment for Acne

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REFERENCES

(1) S.M. Bluefarb, M.D. "The Management of Acne Vulgaris in the 12 and 17 Year Age Group", Postgraduate Medicine, 19:144, Feb., 1956.

(2) S. W. Becker and M. E. Obermayer, Modern Dermatology and Syphilology, 2nd Edition.

-Continued from page 114a

complete suspension of their injections for varying periods, the longest being five months. In all cases, the injections of the mercurial diuretic were spaced out over longer intervals. The Mictine must be taken during meals in order to avoid gastric irritation, which was the only sign of toxicity observed. The authors believe that Mictine deserves further observation in connection with moderate congestive failure and in all cases where mercurial diuretic therapy is contraindicated.

Triamcinolone in Bronchial Asthma

A new synthetic corticosteroid, Triamcinolone (9 - alpha - fluoro-16-alphahydroxyldelta-l·hydrocortisone diacetate), was administered to 17 patients, 16 of whom had bronchial asthma and one had perennial rhinitis. According to Sherwood and Cooke in J. Allergy [28:97(1957)], eight patients were symptomatically better than they had been on prednisone and prednisolone therapy. The other nine showed no further improvement. The authors indicated that they noted no side effects such as increase in blood pressure, gastrointestinal discomfort, hirsuitism, facial roundness, acne, sleeplessness, or mental aberations in any of the patients.

Nicetin for the Treatment of Fungous Infections of the Skin

The number of therapeutic measures available for the treatment of fungous

-Continued on following page

in convalescence

one of many indications for

Solve the potency vitamin-mineral formula

"Generally, the more rapid and complete the nutritional rehabilitation, the shorter the convalescence."*

MYADEC Capsules are supplied in bottles of 30, 100, 250, and 1,000.

*Goodhart, H. S.: Vitamin Therapy Today, M. Clin. North America 40, 1473, 1956.

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BRITIS

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infections of the skin, a personal knowledge of the difficulties involved in finding efficacious therapy, and experience with Nicetin for certain other disorders. prompted A. J. Brady and J. D. Grav [Canadian Medical Association Journal, 76:725(1957)] to see if the powerful fungicidal properties of the drug could be utilized for these conditions. Since the keratin of the skin inhibits the action of fungicides, it follows that a successful treating agent must contain keratolytic as well as fungicidal properties. Nicetin was used in one of two forms, either as a two-per cent ointment using Unibase as the vehicle, or as a two-per cent solution in propylene glycol. Treatment

should not be prolonged for more than ten days. In the first cases treated, a five-per cent ointment was used, but this led to the immediate appearance of a "scarlatinal" type of rash: with a twoper cent concentration that difficulty was obviated. The effect of Nicetin was observed in the treatment of two groups of patients: 35 in one unit and 75 in the other. All response was favorable with the exception of one case of hairy tongue. Two patients had relapses which cleared after a second five-day course. Two allergic reactions occurred, Nicetin appears to have two properties which are essential for the successful treatment of fungous infections of the skin: it is a fungicide, and an epithelial keratolytic agent.

The latter is indicated by: (1) the excellent results obtained in this series of endemic infections which are notoriously more resistant to cure than epidemic ones, (2) microscopic observations of the lytic changes in the treated squamous epithelium, and (3) the finding that increased concentrations of the drug are accompanied by increased dedolation.

The Use of Cortisone for Pelvic Infections and Vaginal Fistulas

Reports in the literature of the inhibitive effect of cortisone on the formation of granulation tissue and fibroplasia prompted the authors, C. G. Collins and F. B. Jones of New Orleans [Obstetrics and Gynecology, 9:533 (1957)] to employ this hormone in the treatment of pelvic infection where hard, brawny exudate extended from the uterus to one or usually both bony walls of the pelvis, a condition labeled "ligneous cellulitis" because of its woody consistency. In this entity, not





and many other skin disorders

use new Viotorm= Hydrocortisone

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antibacterial antifungal anti-inflammatory antipruritic

Tubes of 5 and 20 Gm.
VIOFORM* (indechlorhydrosysuin CIBA)

C I B A SUMMIT, N. J. UPIN

See page following 146a for actual clinical demonstration

why 50 million fathers have been happier than kings

Through the ages, even royalty was often helpless where problems of infant feeding were concerned. Crowns quivered as the hungry cries echoed through the palace corridors. Thrones trembled as the wails of the princeling wavered, grew weaker. And there was no answer.

Through the years medical science worked on the problems of digestive disturbances in infants. Progress was gradually made, and then in 1929 medical research demonstrated that evaporated milk offered one of the most versatile and satisfactory solutions to bottle feeding problems.

Since then, the fathers of more than 50 million babies have been happier than kings.

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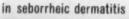


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- Continued from page 118a

only is the exudate hard, brawny and woody, but uterus, tubes and ovaries are rigidly fixed. Many months of medication have been required before surgery was feasible. Since 1950, patients presenting this condition have been treated by cortisone in addition to antibiotics. Cortisone was administered daily for a period of ten days to two weeks, the total dosage not exceeding 3 Gm. Antibiotics were administered also to cover any "cortisone spread effect." Results were dramatic: there was a considerable reduction in induration and the once "frozen" pelvic organs regained partial-to-total mobility; symptoms of pain and/or fever subsided or

disappeared completely. If symptoms persisted, surgical procedures were carried out without difficulty. Noting certain factors of similarity between these conditions and rectovaginal and vesicovaginal fistulas, the regimen of cortisone, 100 mg. three times daily, penicillin, and a broad-spectrum antibiotic was followed for ten days. If the fistula had not healed, surgery was performed the next day; dissection was uncomplicated. structures were easily identified, and the tissue did not tear when sutures were placed; healing proceeded normally. Cortisone was discontinued prior to the operation. The average time from discovery of the fistula to the time of repair was four weeks: in control cases. the time was 94 weeks. This tremendous difference in time appears to be ample justification for the authors' procedure.





and many other skin disorders

Hydrocortison

Cream

antibacterial antifungal anti-inflammatory antipruritic

Tubes of 5 and 20 Gm.
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C I B A SUMMIT, N.J.

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See page following 146a for actual clinical demonstration

Percodan for the Management of Postpartum Pain

The present authors, among a number of clinicians have been aware of a void between mild analgesics and the very potent ones. Moderately severe pain will not yield to the first, and is not severe enough to justify the use of the second group. Recently a new drug. Percodan, has been made available which is claimed to have analgesic properties superior to those of codeine, to act more speedily, and to be effective twice as long. J. J. Bomica and his associates of Seattle [Western Journal of Surgery, Obstetrics and Gynecology, 65:84(1957)] decided to make their own study of the effectiveness of the drug when administered to a group of patients complaining of postpartum

It is well known that clinical eval-

-Continued on page 123a

MEDICAL TIMES

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Tricofuron is powerfully trichomonacidal "even in the presence of vaginal debris and menstrual blood."³ For 44 of 48 patients: lasting cure was obtained with a single course of Tricofuron therapy.³

Vaginal Suppositories—for home use—each morning and night through one cycle, including the important menstrual days. Contain 0.25% Furoxone* (brand of furazolidone) in a water-miscible base. Box of 12, each sealed in green foil.

Vaginal Powder-for office use-applied by the physician at least once a week, except during menstruation. Contains 0.1% Furoxone in an acidic powder base of lactose, dextrose, citric acid and a silicate. Bottle of 30 Gm.

References: 1. Bernstine, J. B., and Bakuff, A. E.: Vaginal Infections, Infestations and Discharges, New York, The Blakiston Company, Inc., 1953. p. 235. 7. Oversteel, E. W.: Arizona M. 10:383, 1953. 3. Schwartz, J.: Obst. Gyn., N. Y. J. 317, 1956. 4. Crussen, E. J.: Diseases of Women, St. Louis, The C. V. Mosby Company, 1953, p. 292.

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New Cerofort Drops are designed for the child whose signs and symptoms check with the low protein profile and whose dietary history shows a low intake of solid protein foods such as meat, eggs, or cheese. Poor mealtime habits of parents and child change slowly. Immediate help in this condition can safeguard the child's future against the effects of prolonged faulty nutrition.

Cerofort Drops provide a needed "protein pickup." besides promoting appetite and weight gain with therapeutic amounts of vitamin B_{12} and thiamine. The essential amino acid, t-Lysine, is supplied in sufficient quantity to raise the tissue-building value of poor quality cereal protein to that of high quality muscle protein. Pyridoxine promotes protein metabolism.

The child with the low protein profile needs

Cerofort Drops

The daily dose of 1.5 cc. provides:

L.Lysine Monohydrochloric	le		450 mg.°
Vitamin B ₁₈			25 mcg.
Thiamine Hydrochloride			10 mg.
Pyridoxine Hydrochloride			5 mg.

approximately equivalent to 340 mg, of clysine,

In bottles of 24 cc., with drapper marked to deliver approximately 0.5 cc. CEROFORT DROPS are pleasant tasting and readily miscible with all liquid foods. The recommended dose is one dropperful, 0.5 cc. t.i.d., to be taken at meal-time to assure the maximal benefit of lysine fortification. For infants, add 0.5 cc. to formula t.i.d. Shake to mix. If desired, add three 0.5 cc. dropperfuls to entire day's supply of formula after mixing ingredients and before bottling.



-Continued from page (20s

uation of analgesic drugs presents difficulties not ordinarily encountered, because there is no objective method of the quantitative measurement of pain. Even a subjective response may vary tremendously among different individuals and in the same individual at different times. Hence the choice of postpartum patients in the present evaluation, since in this group which has several factors in common, the number of variables is decreased. Results of using Percodan showed that 89 per cent of the 143 patients in the group obtained adequate relief, findings that warrant further clinical trial. The sideeffects which occurred most frequently

were nausea, vomiting, dizziness, and headache. However, the reactions were substantially similar to those experienced from codeine. The authors note further that owing to a paucity of information in the literature and to the apparent lack of importance assigned to postpartum pain by clinicians, their study of analgesics has prompted them to begin a more intensive investigation of the problem of postpartum pain and the many factors which effect it.

Combined Cycloserine and Other Antituberculous Agents in the Treatment of Pulmonary Tuberculosis

Published results of the use of Cycloserine and its antituberculous properties encouraged the authors, I. G. Epstein

-Continued on following page

prepare your "over-forty" patient for his future...



ELDEC Kapseals

to aid in maintaining nutritional and hormonal efficiency

Available in bottles of 100

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-Continued from preceding page

and his co-workers of New York City American Review of Tuberculosis and Pulmonary Diseases, 75:553(1957)] to extend their observations in connection with a group of 43 unselected patients admitted to the Metropolitan Hospital with advanced cases of pulmonary tuberculosis. The primary purpose of the investigation was to discover the dose of Cycloserine in combination with isoniazid or streptomycin which would yield the most satisfactory therapy for pulmonary tuberculosis with a minimum of toxicity. It had already been shown that while Cycloserine was an excellent antituberculous agent, side-effects limited its usefulness. Two dosage levels of Cycloserine and isoniazid were used: (a) 0.25 gm. of Cycloserine four times daily and 150 mg, of isoniazid twice daily, (b) 0.5 gm, of Cycloserine and 4.0 mg. of isoniazid per kg. daily. Results of the first dosage unit, (a), were prompt with marked antituberculous activity, gain in weight, roentgenographic clearing, and reversal of infectiousness, Reduction in the dosage level, (b), did not appear to alter the therapeutic efficacy of the combined drugs. In the second combination, 1.0 gm. of oral Cycloserine was given daily and 1.0 gm. of streptomycin was given intramuscularly. Significant roentgenographic improvement occurred in all patients, but the progress was less rapid than in the isoniazid-Cycloserine group, also the sputum conversion took longer. The use of smaller doses of Cycloserine than was formerly used in combination with isoniazid has resulted in a nontoxic, highly effective regimen for the treatment of pulmonary tuberculosis. According to the report, this combination of drugs has proved to be superior to other therapy in speed and degree of clinical response.

Furadantin for the Treatment of Urinary Infections

The most troublesome problems in urologic practice are urinary infections which are resistant to sulphonamides and antibiotics, according to Colin Edwards of Sydney [Medical Journal of Australia, 1:503(1957)]. He reports on a clinical trial of Furadantin for these conditions, a drug not freely available in Australia. Furadantin is understood to be bactericidal, not bacteriostatic; it is highly soluble thereby obviating the danger of crystallization, and resistant mutants appear to develop less readily than is the case with antibiotics. The average dose is eight 50-milligram tablets daily. If no improvement occurs after three days, the drug should be discontinued. In the group of 23 patients

-Continued on page 1284

MEDICAL TEASERS

Solution to puzzle on page 43a

V	0	4	A	e.	0	W	E	0		V	E	4	A	R
0	0	A	3		C	E	R	A		E	0	E	M	A
7	1	C	K		C	A	R	C	1	N	0	5	1	5
0	U	7		3	U	N		7	0	A		E	0	H
5	M	0	K	E	R		4	Y	N	C	H		E	
		3	A	C		0	1	4		A	G	9	E	R
P	R	£	Y		0	R	C		E	V	0	4	V	E
0	4	R		4	0	B	E	L	1	A		A	1	L
3	T	u	P	E	3		N	0	R		0	N	L	Y
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			S	1	N	C	E		C	A	R	E	5	5
A	M	A		0	A	T		R	Y	E		R	E	P
M	E	N	1	N	G	1	7	1	5		P	0	A	E
0	Ç	A	7	A		N	E	5	7		A	u	R	A
N	A	7	A	6		0	0	E	5		7	3	A	R

MEDICAL TIMES

NEW! for patients of all ages

prevents and relieves skin discomforts aids healing

Superior Antibacterial Action*



* CONTAINS	MEXACHL	опоривля	0.25	PER	CENT	AND
BARA CHIL	SOC META	WHI CHAIL A		-	SHT.	

Zones of Growth In (Zone size	hibition – Ap es in millime		sts
TEST ORGANISM	JOHNSON'S MEDICATED POWDER	MEDICATED POWDER A	MEDICATE POWDER I
Proteus vulgaris	5.0	0.0	0.0
Micrococcus pyogenes var. albus	6.5	0.0	0.0
Micrococcus pyogenes var. albus hemolyticus	5.5	0.0	0.0
Micrococcus pyogenes var. aureus hemolyticus	5.5	0.0	0.0
Micrococcus pyogenes var. aureus (Wellcome strain CN491)	6.5	0.0	0.0
Alcaligenes faecalis	10.0	0.0	(3.0)†

antibacterial: twofold antiseptic action curbs primary infections, helps prevent secondary infections.

anti-urease: specific inhibition of the enzyme urease plus action against urease-producing bacteria checks formation of ammonia...prevents diaper rash and ammoniacal dermatitis.

superior absorption: two highly effective moisture absorbents help keep skin cool and dry...combat maceration, chafing and irritation.

JOHNSON'S MEDICATED POWDER provides unexcelled dry lubrication as well as effective deodorizing action. It is ideal for sensitive skin—completely safe for babies and children.

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Chilling remarkably enhances the sherry flavor of GEVRABON. For some time physicians have been advantageously prescribing GEVRABON with ice as an appetite-stimulating tonic before mealtime—adding a refreshing touch to regular dietary supplementation for their senior patients.

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Each fluid ounce (30 cc.) contains:

Thiamine HC1 (B ₁)	5
Riboflavin (B ₂)	2.5
Vitamin B ₁₂	1 200
Ntacinamide	50
Pyridoxine HC1 (B _n)	
Pantothenic Acid (as panthenol)	10
Choline (as tricholine citrate)	100
Inositol	100
Calcium (as Ca glycerophosphate)	48
Phosphorus (as Ca glycerophospha	te) 39
fodine (as K1)	1
Potassium	10
Magnesium (as MgC1;s6H-41)	Z
Linc (as ZnC1 ₂)	2
Manganese (as MnC12,4H2O)	2
iron (as ferrous gluconate)	20
Alcohol	

*Roy, U. S. Pat. Off



LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

-Continued from page 124a

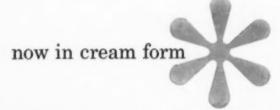
used for the tests, sulphonamides and antibiotics had been ineffective. In twelve cases the urine was rendered sterile: in three, it was microscopically free of organisms. Although in eight cases the original infection persisted, the condition in all patients showed definite clinical improvement. Sideeffects, which could be readily controlled, were principally nausea, vomiting, skin sensitivity, and diarrhea. Several complications of common occurrence with antibiotics were not observed. In spite of the limited scope of the present trial, it was noted that bacteria which had been resistant to sulphonamides and antibiotics yielded to Furadantin. The drug appears to be potent and relatively innocuous for use

in selected cases of urinary infection.

Prednisolone Snuff in Hay Fever

Reports have appeared in the literature regarding the efficacy of cortisone, hydrocortisone, and corticotrophin systematically administered in the treatment of hay fever. It has been the consensus, however, that, due to the severity of side-effects, both the older and newer steroids be restricted to severe cases which have failed to respond to other therapy. Statements have been published on the beneficial effects of topically used prednisolone in solution for nasal allergy, and on the favorable results from the use of hydrocortisone snuff in connection with pollen hay fever: side-effects did not occur. These reports encouraged the authors, M. P. Godfrey and his associates of King's College Hospital, London, Lancet.

-Continued on page 130a

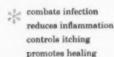


STEROSAN-Hydrocortisone

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comprehensive control of skin disorders infectious dermatoses · contact dermatitis · atopic dermatitis · nonspecific pruritus



STEROSAN®-Hydrocortisone (3% chlorquinaldol GEIGY with 1% hydrocortisone) Cream and Ointment. Tubes of 5 Gm. Prescription only,

and when a nonsteroid preparation is preferred STEROSAN® (chlorquinaldol GEIGY) 3% Cream and Ointment, Tubes of 30 Gm, and jars of 1 lb. Prescription only.

GEIGY Ardsley, New York

MEDICAL TIMES

drug-induced constipation... a recurrent problem

"antispasmodics, anticholinergies and hypotensive agents have a definite constipating effect."

> "Constipation... can be a serious drawback to the use of any ganglionic blocking agent."2

Olson³ reports that patients in a controlled study, suffering from drug-induced constipation, were able to continue medication when Veracolate was administered at the same time. His patients "found Veracolate satisfactory therapy at a t.i.d. dosage", and were able to re-establish and maintain regular bowel habits despite the costive influence of other drugs. Patients whose constipation was due to other causes, also responded very favorably to Veracolate, the physiologically-active laxative.

Hootnick, H. L.: J. Am. Geriatrics Soc. 6:1021 (Oct.) 1956.
 Moyer, J. H.;
 GP 15:109 (Feb.) 1957.
 Olson, J. A.: Personal communications.

VERACOLATE[®]

FOR DRUG-INDUCED CONSTIPATION

STANDARD LABORATORIES, INC. . MORRIS PLAINS, N. J.

I:767(1957)] to consider the use of prednisolone snuff for treating a small group of patients with hay fever, Capsules contained 1 mg. of prednisolone with 144 mg, of lactose. For application, a pinhole was made in both ends of a capsule which was then placed in an insufflator: pressure on the bulb produced a fine spray. Patients were requested to use one capsule twice daily: if hay-fever symptoms were not controlled, they were to make use of 4-mg. chlorprophenpyridamine maleate tablets. Thirty-eight patients completed the trial.

Although comparatively small doses of prednisolone were used, the authors believe that the inhalation of prednisolone snuff is a promising method of controlling hav fever; no sideeffects were noted. Symptoms of rhinitis, itching and congestion of the conjunctivae were relieved. The statement has been made that inhalation of hydrocortisone through the mouth produces an increased urinary excretion of 17-hydroxycorticosteroids suggesting systematic absorption. Whether or not this is true with small quantities of the drug requires further investigation.

Absorption of Vitamin B.

Factors other than intrinsic factor affect the absorption of vitamin B12. according to Chow, Hsu and Okuda in a report before the 12th annual meeting of the National Vitamin Foundation in New York City. The authors pointed out that absorption of the vitamin can take place in gastrectomized subjects.

It was found that the vitamin was absorbed better from aqueous solutions than from certain types of gelatin capsules. A lipotropic elixir, containing ribroflavin, niacinamide, pyridoxine, betaine, choline, inositol, ferric pyrophosphate, caffeine citrate and alcohol. provided more effective absorption than did water. One-fourth as much vitamin dosage in the elixir as compared with an aqueous solution produced serum ele--Concluded on page 134s

WHO IS THIS DOCTOR?

(from page 53a)

"Doctor Livingston, I presume?" David Livingston is the physician. Sir Henry Morton Stanley headed the search,



in anogenital pruritus

and many other skin disorders

Viotorm² use new antibacterial

antifungal anti-inflammatory antipruritic

VIOFORM* (indechlorhydraxyquin CIBA)

C I B A SUMMIT, N. J.

See page following 146a for actual clinical demonstration

Now...control both
the G.I. disorder
and
its
"emotional
overlay"

PATHIBAMATE

Now...control both the G.l. disorder

and

its

Thirty-eight patients complement

emotional

overlay"



and many other skin disorders

Hydrocortisons

bream =

CABA

antibacterial antifungal anti-ordanimatory

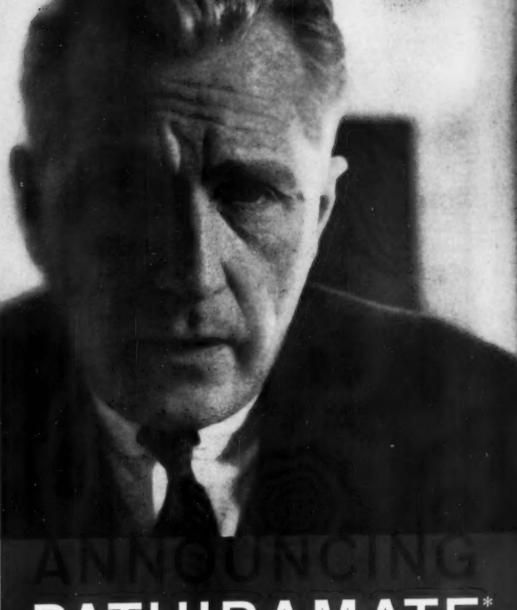
See min bellewing 146a actual :

from page 53a/

aqueous solution produced serum

Theory Livingston, I presume? David thingston is the physician. So Bienes thomas Stanley bunded the words

Married Toward



PATHIBAMATE*

PATHIB

combines Meprobamate (400 mg.):

Widely prescribed tranquilizer-muscle relaxant. Effectiveness in anxiety and tension states clinically demonstrated in millions of patients. Meprobamate acts only on the central nervous system. Does not increase gastric acid secretion. It has no known contraindications, can be used over long periods of time. 1.2.3

with Pathilon (25 mg.):

An anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of G.I. tract disorders. In a comparative evaluation of currently employed anticholinergic drugs,

PATHILON ranked high in clinical results, with few side effects,
minimal complications, and few recurrences.4

Now...with PATHIBAMATE...you can control disorders of the digestive tract and the "emotional overlay" so often associated with their origin and perpetuation...without fear of barbiturate loginess, hangover or addiction. Among the conditions which have shown dramatic response to PATHIBAMATE therapy:

DUODENAL ULCER . GASTRIC ULCER . INTESTINAL COLIC

SPASTIC AND IRRITABLE COLON . ILEITIS . ESOPHAGEAL SPASM

ANXIETY NEUROSIS WITH G.I. SYMPTOMS . GASTRIC HYPERMOTILITY

AMATE

Comments on PATHIBAMATE from clinical investigators

- "I find it easy to keep patients using the drug continuously and faithfully. I feel sure this is due to the desirable effect of the tranquilizing drug."
- "The results in several people who were previously on belladonna-phenobarbital preparations are particularly interesting. Several people volunteered that they felt a great deal better on the present medication and noted less of the loginess associated with barbiturate administration."
- PATHIBAMATE..."will favorably influence a majority of subjects suffering from various forms of gastrointestinal neurosis in which spasmodic manifestations and nervous tension are major clinical symptoms."7
- "In the patients with functional disturbances of the colon with a high emotional overlay, this has been to date a most effective drug."

References: 1. Borrus, J. C.: M. Clin. North America, In press, 1937. 2. Gillette, H. E.: Internat. Rec. Med. & G. P. Clin. 169:453, 1956. 3. Pennington, V. M.: J.-d.M.A., In press, 1957. 4. Cayer, D.: Prolonged Anticholinergic Therapy of Duodenal Ulcer. Am. J. Dig. Dis. 1:301-309 (July) 1956. 5. McGlone, F. B.: Personal Communication to Lederle Laboratories. 6. Texter, E. C., Jr.: Personal Communication to Lederle Laboratories. 7. Baser, H. G. and McGavack, T. H.: Personal Communication to Lederle Laboratories.

Supplied: Bottles of 100 and 1000

Administration and Dosage: 1 tablet three times a day it mealtimes and 2 tablets at bedtime. Full information on PATHIBAMATE available on request, or see your local Lederle representative.

Pathibamate # 100 Sig: 1 tab. t.i.d. at mealtime. 2 tabs. at bedting.

-Continued from page 130a

vation levels in four months equivalent to those from the solution in six months. Other factors found to reduce the effective absorption of the vitamin were adrenal hyperactivity, thyroid hypoactivity and pyridoxine deficiency.

The Use of Antibiotics in Infants

Infants have poor host resistance because of the immaturity of the various defense mechanisms. Since successful antibiotic treatment depends upon healthy host resistance, infants may not be able to limit the spread of infection and bring about the ultimate eradication of the invading microorganism. The danger of additional stresses such as metabolic disturbance and direct toxicity of the antibiotic on tissue cells is also greater in infants than in patients of other ages. Therefore, Swift, writing in the Brit. Med. Jr. [No. 501:129 (1957)], suggested that narrow spectrum antibiotics, such as penicillin; should be used in the treatment of infants and that they should be selected with greater care and prescribed with accuracy.

Side Reactions to Benzathine Penicillin Following Treatment for Rheumatic Fever

In a series of 40 children convalescent from rheumatic fever given an intramuscular injection of 1,200,000 units of benzathine penicillin, the injection was followed by fever in 12.5 per cent, elevation of the sedimentation rate in 42.5 per cent, and positive C-reactive protein tests in 55 per cent. According to Haas, Taranta, and Wood in the New England J. Med. [256:152(1957], these reactions were not detrimental to the health of the patient and should not be confused with rebounds of rheumatic fever.

Such rebounds do frequently occur after penicillin therapy of rheumatic fever is discontinued.

The authors indicated that the reactions to benzathine penicillin did not seem to be allergic but might have been a delayed type of sensitivity reaction of the foreign body type.

The Dangers of Tranquilizing Drugs

The effects of tranquilizing drugs were studied in a series of 3,200 patients, essentially normal from the physical and mental health aspect, but who had certain anxiety disturbances.

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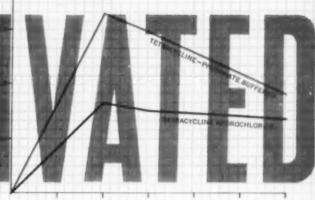


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RAGE SERUM



for higher, faster blood levels tetracycline

Tetracyn V, tetracycline-phosphate buffered. given orally, produces "markedly higher serum concentrations than those obtained with tetracycline hydrochloride."1

In a crossover study, Tetracyn V afforded serum levels higher than tetracycline hydrochloride at two, three and six hours, following oral administration.1

HOURS AFTER ADMINISTRATION OF 250 Mg, DOSE

Therapy with activated Tetracyn V thus provides a higher, faster activity level of tetracycline, established as outstanding in effectiveness and safety among broad-spectrum antibiotics.

SUPPLIED: Capsules, each containing tetracycline equivalent to 250 mg. tetracycline HCl, with added sodium metaphosphate.

1. Welch, H.; Lewis, C. M.; Staffa, A. W., and Wright, W. W.; Actibiotic Med. & Clim. Therapy 4:215 (April) 1957.

tetracycline -- phosphate buffered

-Continued from page 134

Of these patients, 7,500 had taken some tranquilizing drugs before coming under the care of Dickel and Dixon. These authors reported, in *J.A.M.A.* [163:422 (1957)], that the dangers to the physical health of the patient were indicated by the appearance of allergic phenomena in 96, general toxic effects in 78, habituation in 72, severe liver disturbances in 31, other severe symptoms in 97, and death in 4. The dangers to the emotional health of the patient were indicated by the development of serious problems in 1,700 and the aggravation of emotional illness in 827.

After stressing the necessity for careful evaluation of the actions of the tranquilizers before they are prescribed, the authors made the following final comment, "the modern medical philosophy must continue to be that basically man is better off having to fare for himself—that being too well cared for, having to little fear from cradle to crypt, is not healthy and that all drugs are still only a small and essential part of medical practice, certainly no cure-all for modern trouble to be dispensed indiscriminately without sound medical advice."

Reserpine in the Management of Chronic Alcoholism

A double-blind study involving 145 chronic alcoholic patients was made in an effort to determine the value of resperine in calming patients undergoing treatment for chronic alcoholism. Of this group, 112 patients received either 0.25 or 0.5 mg, of reservine twice a day

Relieve circulatory insufficiency in

RAYNAUD'S DISEASE

-Buerger's disease, varicose veins, and other circulatory disorders...

- increases blood flow
- relieves pain
- stimulates cellular metabolism



86TH

and 33 patients received an identical placebo.

At the conclusion of the study, 28 patients who had received reserpine were considered to be well, 25 moderately improved, 27 slightly improved, and the remainder unchanged. Of those receiving placebo, 4 were considered to be well, 3 slightly improved, and the remainder unchanged. Other medications were administered if the physician in charge felt them necessary.

In spite of the limitations of such a study, Wells stated in J.A.M.A. [163: 426(1957)] that improvement was considered to be significant and attributable to reserpine in more than one-half of the patients receiving this drug.

Steroids in Leukemia

The administration of large doses of prednisone and prednisolone to 18

cases of acute leukemia resulted in clearcut complete remissions in five and partial remissions in six patients. According to Ranney and Gellhorn in Am. J. Med. [22:405(1957)], these results do not indicate that massive doses of these drugs should be the treatment of choice for acute leukemia of adults since side reactions were often quite serious. In addition to the side reactions usually seen with prolonged steroid therapy, complications to the large doses used in these patients included the development of diabetes, bacteremia, septicemia, local pyogenic and generalized fungus infection, psychoses, gastrointestinal ulceration and perforation. In spite of such serious side effects, the authors suggested that this massive therapy warranted use in otherwise refractory cases of acute leukemia.

-Continued on following page

uastran

VASODILATOR AND SAFE METABOLIC STIMULANT

In each VASTRAN toblet:

Nicetinic acid Ascorbic acid		Pyridoxine hydrochloride Calcium pantothenate	
Riboflavin		Cobalamin	
Thiamine mononitr	ate 10 mg.	(Vitamin B ₁₉ activity)	1
1	Bottles of 1	00 and 500.	

In each cc. of	VASTRAN	AMP	solution		
Nicotinic acid (a				20	mg.
Adenosine-5-Mon Vitamin B.	ophosphoric acid	las sodiu	m salt)		mg.
Attamin D13	In 5-cc. ste	rile viat	ş.	13	mel

Also effective in relieving muscle and joint pain, and in improving cerebral circulation and nutrition in elderly patients.

After each dose—oral or intramuscular—patients experience a warm, tingling flush to prove that VASTRAN'S vasodilating effect is taking place.

Nicotinic acid, as provided in VASTRAN, has been shown by impressive clinical evidence to provide strikingly effective relief of circulatory insufficiency in all forms of peripheral vascular disorders. Other coenzymes in VASTRAN stimulate metabolism and overcome latent vitamin deficiencies. Result: VASTRAN overcomes ischemia, oxygenates tissues and helps to restore normal physiology to the affected part.

Send for free sample of VASTRAN tablets and literature

WAMPOLE LABORATORIES
Henry K. Wampole & Co., Inc. · Philadelphia 23, Pa.

-Continued from preceding page

Isoniazid in the Treatment of Acne

Isoniazid was used in the treatment of 20 patients with recalcitrant acne with papulopustular lesions for periods of 1 to 3 months. Osbourn reported, in A.M.A. Arch. Dermatol. [75:129 (1957)], that 9 patients had good results, five showed a fair response, and six showed no change. The patients showing the most benefit were those whose acne showed an appreciable erythematous component.

The drug had no apparent effect on preventing comedo formation or on deep cryst formations.

The rationale for the use of isoniazid in sone vulgaris was that the disease shows pathologically, particularly in its early stage, a granulomatous reaction that resembles tuberculosis.

Butylphenamide in the Treatment of Dermatomycoses

A new anti-fungal agent, N-n-butyl-3phenylsalicylamide (butylphenamide), was employed in the treatment of 183 patients with fungus infections of the skin or chronic dermatoses. The agent was employed in the form of a 5 or 10 per cent tincture, a 5 per cent ointment, or a 5 per cent water soluble base.

Krafchuk reported in *I. Invest. Dermatol* [27:149(1957)] that there were no significant differences in the results from treatment with the three dosage forms, although relief from itching seemed to be more rapid following use of the tincture. The affected area was cleaned once a day and the agent was applied 3 or 4 times a day. Results were very favorable. In cases where complete cure was not obtained, relief from itching was frequently a very welcome symptomatic result.

Tranquilizing Drugs in the Treatment of Headaches

Patients with headaches classified as migraine, tension and hypertension were treated with one of three tranquilizers during a period of 30 months. Reserpine was used in the treatment of 461 patients, chlorpromazine of 169 patients, and meprobamate of 210 patients. Friedman reported in Am. Pract. and Digest of Treat. [8:94(1957)] that improvement was noted in 45 per cent of those with migraine, 49 per cent of those with tension headache, and 77 per cent of those with hypertension who were treated with reserpine.







by changing the attitude of the emotional dermatologic patient,

'Thorazine' facilitates the management of the patient and the treatment of skin disorders. The patient becomes less insistent and frantic, and accepts her affliction philosophically. 'Thorazine' does not cure skin diseases, but, according to Cornbleet and Barsky,' it is a "most useful adjuvant to dermatologic therapy" in patients with an emotional background of tension, apprehension, excitement, anxiety and agitation.

THORAZINE

"can be to the dermatologist what the anesthetist is to the surgeon."

Smith, Kline & French Laboratories, Philadelphia 1. Comblect, T., and Barsky, S. The Role of the Tranquilizing Drugs in Dermatology, presented at 115th Annual Meeting of Illinois State Medical Society, May 19, 1955.

*T.M. Reg. U.S. Pat. Off. for chlorpromazine, S.K.F.

not an antacid not an antispasmodic not an anticholinergic not a sedative but

A NEW NUTRITIONAL TREATMENT FOR PEPTIC ULCER

- · relieves symptoms in a few days
- · heals ulcers within one to three weeks
- · heals in the presence of acid
- · has no side effects

EXUL's principal ingredient is NUPRA, a non-hormonic, non-steridic extract of beef organs: liver, brain, adrenals. EXUL also supplies dehydrated cream and milk, ferrous gluconate, thiamin, niacinamide and flavoring extracts. Each wafer supplies approximately 135 calories.

EXUL is supplied in hermetically-sealed tins containing 5 wafers. Dosage is 5 wafers or less daily, depending on the severity of the case.

Complete literature is available on request to Medical Department.

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FIRST...the master key to successful antifungal therapy.

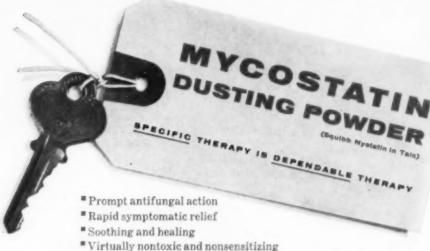


MYCOSTATI

SPECIFIC FOR LOCALIZED CANDIDA ALBICANS INFECTIONS

NOW...another special key to therapeutic response...

particularly formulated for Candida albicans infections of the skin manifested as diaper rash, genitocrural eruptions, intertrigo and interdigital lesions, including athlete's foot.



Extremely well tolerated

Easy to apply

Therapy schedule: Each gram of purified talc base contains 100,000 units of Mycostatin. Apply Mycostatin Dusting Powder directly to mycotic lesions two or three times daily until healing is complete. In athlete's foot, dust freely on feet and in shoes and socks or hose.

Supply: One-half ounce plastic squeeze bottles. Stable for 24 months at room temperature.

Also available: Mycostatin Vaginal Tablets, Mycostatin For Suspension, Mycostatin Ointment, Mycostatin Oral Tablets.

SQUIBB



Squibb Quality-the Priceless Ingredient

(Vol. 85, No. 7) July 1957

1410

Continued from page 138a

With chlorpromazine 47 per cent of the migraine patients and 52 per cent of the tension cases obtained relief. Following the use of meprobamate 55 per cent of the migraine patients and 65 per cent of the tension cases showed improvement. However, the author pointed out that a placebo will often provide a fairly high percentage of improvement. The author concluded that, although this study did not give conclusive evidence of the value of tranquilizers in treating headaches, the drugs were of value in reducing emotional tension and in allowing the patient to

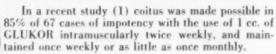
handle stressful situations more effectively.

The Relationship Between Vitamin B₁₂ Serum Levels and Age

The vitamin B₁₂ serum levels were obtained from 528 apparently healthy individuals between the ages of 12 and 94. Four groups of patients were studied, one from a public home for the aged, one from a penal institution, one from a sampling of a city population, and a fourth from a private home for aged. According to Gaffney et al in J. Gerontol. [12:32(1957)], there was a significant regression in the serum levels of the vitamin with increasing age. The degree of regression among the

-Continued on page 146a

IN IMPOTENCE



GLUKOR has also been found valuable in the male climacteric, male senility, angina pectoris, coronary thrombosis and other conditions associated with gonadal decline. GLUKOR may be used regardless of age and/or pathology, without side reactions. There are no contraindications. Antagonism with any other drug has not been observed.

1. Gould, W. L.: Impotence, M. Times 84:302 (March) 1956

GLUKOR®

Each cc. contains:-200 L.U. chorionic gonadotropin, 25 mg. thiamine HCL 52.5 p.p.m. 1(+)glutamic acid, 0.5% chlorobutonal and 1% procaine HCL

Available in 10 cc. and 25 cc. multiple-dose vials.

RESEARCH SUPPLIES . ALBANY, NEW YORK

*Reg. U. S. Pat. Off. Patent Pending @1957

Also available:—An analogous preparation for the female — GLUTEST . . . effective in refractory cases where other therapy fails.



With great expectations...

and on the go

Natalins-PF

prenatal phosphorus-free vitamin-mineral capsules, Mead Johnson

phosphorus-free...generous calcium

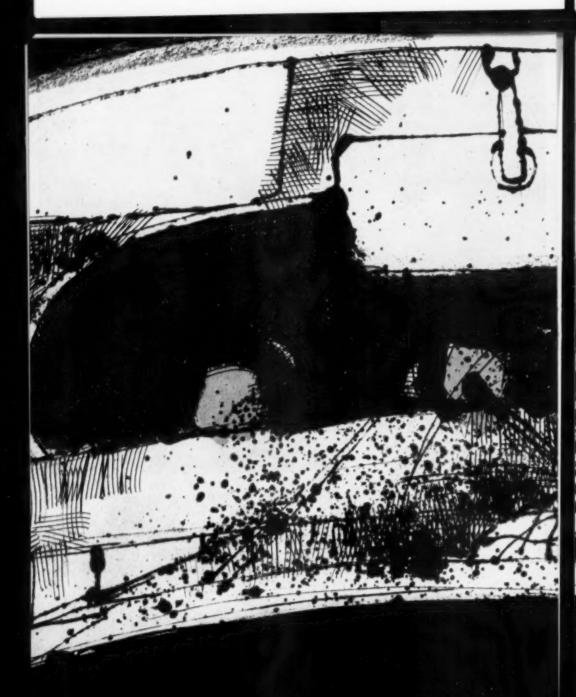


For the modern pregnant woman, just 1 to 3 small, easy-to-swallow capsules daily—according to her individual need—provide generous amounts of iron, calcium and vitamins to help her meet the stress of pregnancy. And they're economical, too—in bottles of 100.

For some patients, you may prefer to prescribe Natalins, which contain both calcium and phosphorus.

MEAD JOHNSON

SYMBOL OF SERVICE IN MEDICINE



calmer days...more restful nights



beginning first day of treatment

Each Nembu-Serpin Filmtab combines 30 mg. Nembutal® Calcium and 0.25 mg. reserpine.

Nembu-Serpin

-Continued from page 142a

groups studied, with their widely different backgrounds and living conditions, suggested that the vitamin B₁₂ level was relatively unaffected by these conditions. The authors stated that, if dietary conditions per se played a part in the decrease in the vitamin level, they did so in consequence of an alteration in the selection of foods by the subjects.

New Experimental Form of Insulin

Experimental studies in laboratory animals has suggested that a non-crystalline, urea-treated insulin, designated OU, may have significantly delayed resorption rate from muscular tissue as compared with suspensions of crystalline insulin. Dischoff and Bakhtiar reported this finding in *Endocrinol*. [60: 333(1957)]. The delay in absorption from tissues was apparently not dependent upon particle size nor crystalline form. The authors suggested that there might have been a change in special arrangement of the molecules or, perhaps, simply the precipitation of a less soluble form of insulin as a result of its contact with urea.

L-Triiodothyronine in Obesity

In a series of 35 obese patients, Letriiodothyronine (Cytomel) was added to a regimen of dextro-amphetamine and died to aid in producing weight loss. Previously, these patients had not obtained satisfactory results from diet and dextro-amphetamine.

-Concluded on page 148a



"In our opinion, Vioform with Hydrocortisone is a worth-while addition to many important skin preparations physicians need and use for controlling acute and chronic skin disorders."*

clearing and control of this skin disease ...and many others

further evidence for

NEW Viotormlydrocortisone Cream



before

Complete clearing in one week.* This case of seborrheic dermatitis had been present 7 days. When seen, there were scally, reddened lesions at right auditory meatus and patient complained of prunitus.

VIOFORM - HYDROCORTISONE
CREAM and bonc acid wel compresses
were sufficient to provide complete clear-

ing in one week. No history of recurrence

*Nelson M Personal communication



after

NEW Vioform Hydrocortisone Cream

anti-inflammalory antipruritic antibacterial antifung

Supplied:

VIOFORM-HYDROCORTISONE Cream, containing iodochlorhydroxyquin 3% and hydrocortisone (free alcohol) 1% in a water-washable base.

Tubes, 5 Gm. Tubes, 20 Gm.

VIOFORM® (iodochlorhydroxyquin CIBA)

Also Available:

VIOFORM Cream Ointment Powder

ENTERO-VIOFORM® Tablets



when treatment is complicated by serious side reactions to hypotensive agents

Veralba-R lowers blood pressure without ganglionic or adrenergic blocking, and, therefore does not impair the vasomotor reflexes which guard against postural hypotension.

Furthermore, Veralba-R does not disturb other essential vasomotor reflexes that control body temperature and distribute blood volume according to physiological requirements.

Composition: Each grooved, unconted Veralba-R tablet contains 0.4 mg. of chemically standardized protoverstrine and 0.08 mg. of reserpine.

Literature and clinical supply package available to physicians on request.





PITMAN-MOORE COMPANY DIVISION OF ALLED LABORATORIES, INC., INDIAHAPOLIS S, INDIAHA

-Concluded from page 146a

However, Weidenhamer, writing in Am. Pract. and Digest of Treat. [8:419 (1957)], stated that the addition of L-triiodothyronine aided in the effective loss of weight in these patients who had not obtained consistent weight loss on the same regimen but without L-triiodothyronine. This drug also aided in the alleviation of such side effects as fatigue, water retention, dryness of the skin, and musculoskeletal aches and pains.

New Cough Suppressant

Persistent and severe coughing can now be practically stopped in its tracks by a drug called noscapine (Nectadon, Merck-Co., Inc.), which can be taken repeatedly or in increased dosages by all patients, young or old, without ill effect.

A report to the Commission on Narcotic Drugs by Dr. Nathan B. Eddy of the U.S. Public Health Service stated that noscapine is as effective for cough relief as codeine, and does not cause unpleasant effects, even when the dosage is increased.

A spokesman for Merck declared that clinical results show that the dosages can be greatly increased without a proportionate increase in side effects, thus permitting wider medical use of a potent cough-suppressant in the treatment of chronic coughing.



M.D.: Mr. R. A. has left home! Gone back to job; arthritic pain and restriction of activity im-proved. Feeling tops. Thanks to wonderful medicine you Rx'd.
-Gratefully, WIFE.



Most active anti-rheumatic, anti-allergic, anti-inflammatory corticoid. White, 5 mg. tablets (bottles of 20 and 100), pink, 1 mg. tablets (bottles of 100); both scored.



Pfizer PFIZER LABORATORIES Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York

NEWS

AND

NOTES

in any urinary tract disorder Pyridium is the specific for fast relief of pain, urgency, frequency and burning



Pyridium brings relief within 20-25 minutes. Pyridium is compatible with and complementary to all specific therapies, whether medical or surgical. With Pyridium you have greater flexibility in the use of any potency or dosage schedule required for successful treatment.

Dosage: 2 tablets before each meal. Supplied: Bottles of 12, 50, 500 and 1,000.

The Question of Tranquilizers

From the University of Michigan Medical School comes words of defense for the so-called tranquilizers. Doctors James G. Miller, Professor of Psychiatry, R. W. Gerard, Professor of Neurophysiology, and Raymond H. Waggoner. Chairman of the Department of Psychiatry, spoke at a meeting of the Michigan Clinical Institute. They refuted the appellation, "chemical straight jackets," and called the tranquilizers "one of the most exciting and important kinds of development in medicine." Dr. Miller described the exhaustive tests that have been made with one of the more important drugs, meprobamate (Miltown). Studies indicated that normal doses of Miltown have no effect on the skills required for safe driving, as determined by a battery of visual, perception, steadiness and driving tests. He stated further that a series of electronic tests are being developed designed to measure reasoning ability, and sensory and perceptual ability.

Charts were shown depicting usage, dosage and potential side-effects of 13 tranquilizers most widely used, as well as the favorable response obtained in

-Continued on page 153a

effective vulvovaginal therapy

trichotine

a detergent...a bactericide and fungicide...
an antipruritic...an aid to epithelization...
an aeathetic and psychosomatic adjunct

Trichotine douches — incorporating the multiple advantages of sodium lauryl sulfate with the recognized values of other specific or adjunctive agents — may be prescribed as often as required in cases of nonspecific vaginitis and leukorrhea, subacute and chronic cervicitis, senile vaginitis, trichomoniasis, and moniliasis; hot packs are often quickly effective in pruritus vulvae.

Concentrated solutions are useful for clean-up or swab treatment in the physician's office.

VACID

the 24-hour vaginal pH stabilizer

The therapeutic value of continual maintenance of normal vaginal pH (4.0 to 4.5) is widely recognized in the treatment of monilial, trichomonal, and nonspecific bacterial infections and in cervicitis.

One Vacid insert suppository will hold the pH of the vagina at the normal physiologic level for 24 hours. Symptomatic relief is noted usually the first day and progressive improvement continues until Doderlein bacilli replace the infecting organisms — usually within 7-14 days.

Samples and literature on request . . . Full details in PDR.

The Fesier Co., Inc. Stamford, Conn.



Give your patient that extra lift with "Beminal" Forte 817

NEWS AND NOTES

-Continued from page 150a

more than a score of conditions. town has been shown to be free of untoward effects, and may, therefore, be used with safety in various disease states. The same drug was called the most effective for neurotic and tense individuals.

It was pointed out that a vast amount of clinical and social observation in behavioral technics is required before it can be said that tranquilizers limit personality or improperly restrict creativity any more than do sedatives and anesthetics when required for specific illness. In closing, a word of caution was injected against over-enthusiasm and indiscriminate administration of these drugs, since many factors pertaining to the mode of action and ultimate effects lack adequate corroboration at this time.

Grants for Hospital Administration and Service Research

Surgeon General Burney of the USPHS announces award of four grants totaling \$163,060 for research in hospital administration and service. The grants, aimed at finding ways to improve the care of patients in hospitals and other health facilities, are awarded under the Hill-Burton program.

Grants are to St. Vincent's Hospital of New York City, \$33,600 for the first year of a three-year project to develop scientific personnel systems and methods for hospitals; to the American Hospital Association, \$100,000 for the first year of a three-year project designed to develop better planning of hospital de-

-Continued on following page



When high vitamin B and C levels are required give your patient that extra lift with "Reminal" Forte.

"Beminal" Forte-each capsule contains:

Thiamine mononitrate (B1)	25.0 mg.
Riboflavin (Bz)	12.5 mg.
Nicotinamide	75.0 mg.
Pyridoxine HCl (Be)	3.0 mg.
Calc. pantothenate	10.0 mg.
Vitamin C (ascorbic acid)	150.0 mg.
Vitamin B ₁₂ with intrinsic factor concentrate . 1/9 U.	S.P. Unit

Improved formula



Dosage: 1 to 2 capsules daily, or more, depending upon the needs of the patient. Supplied: No. 817-Bottles of 100 and 1,000 capsules.



AYERST LABORATORIES

New York, N. Y. . Montreal, Canada

NEWS AND NOTES

-Continued from preceding page

sign; to the Joint Blood Council, \$25,-000 for the first year of a two-year nationwide survey to develop standard terminology for blood-bank technicians and standards for use in accrediting blood banks; and to the University of Oregon Medical School, \$2,460 for a study of needs in training medical technologists.

Top Honors Awarded to NYU-Bellevue Medical Center Physicians

Three physicians of New York University-Bellevue Medical Center have re-

cently been signally honored with national appointments in their chosen specialties.

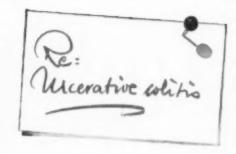
Dr. John H. Mulholland, George David Stewart professor and chairman of the department of surgery, was elected president of the American Surgical Society; Dr. William S. Tillett, professor and chairman of the department of medicine, was elected president of the Association of American Physicians; and Dr. Severo Ochoa, professor and chairman of the department of biochemistry, was elected a member of the National Academy of Sciences.

Dr. Mulholland has been a member of the faculty since his graduation from

-Continued on page 156a



This is "the most valuable drug that has been introduced for the treatment of ulcerative colitis" in recent years.1 Results of treatment with Azulfidine "far exceed those of any previous drug used".2 "It has been effective in controlling the disease in approximately two-thirds of patients who had previously failed to respond to standard colitis therapy currently in use."3



A sulfidine

PHARMACIA LABORATORIES, INC.

501 Fifth Avenue, New York 17, N. Y.

BARGEN, J. A.: "Present Status of Hormonal and Drug Therapy of Ulcerative Colitis", South. M. J. 48: 192 (Feb.) 1955.

BARGEN, J. A. and KENNEDY, R. L. J.: "Chronic Ulcerative Colitis in Children", Postgrad. Med. 17: 127 (Feb.) 1955.

MORRISON, L. M.: "Response of Ulcerative Colitis to Therapy with Salicylazosulfapyridine", J. A. M. A. 151: 366 (Jan. 31) 1953.

NEWS AND NOTES

-Continued from page 154a

NYU in 1925, except for a leave of absence during World War II when he served as chief of the Surgical Service of the First General Hospital (Bellevue affiliated unit) in England and France. Dr. Mulholland has done extensive work in surgery of the gall bladder and metabolic aspects of surgery.

Dr. Tillett, a graduate of Johns Hopkins Medical School in 1917, joined the faculty of NYU in 1930. In 1949 he was a joint recipient, with Dr. L. R. Christensen, of the Lasker Award for their investigation and discovery of "streptococcal enzymatic debridement" which developed into a new therapeutic principle for removing the accumulation of pus or fibrin clots, following injury, without recourse to surgery. The therapeutic agent is known as streptokinase.

Dr. Ochoa joined the staff of NYU in 1942 following faculty appointments with Washington University School of Medicine in St. Louis, Missouri, the University of Oxford Medical School, in England, and the University of Madrid Medical School, in Spain, his native country, where he received his degree in medicine in 1929. He is the 1951 recipient of the Neuberg Medal Award for "outstanding achievement in biochemistry" and is widely known for his research in the field of enzyme chemistry and physiology.

International Society of Orthopaedic Surgery and Traumatology to Meet in Spain

The Seventh Congress of the International Society of Orthopaedic Surgery and Traumatology will be held in Barcelona, Spain, September 16-21, 1957. Tentative subjects for discussion are: Influence of growth on the sequelae of bone and joint injuries; Treatment of flail limbs; Treatment of giant-cell tumors; Surgical treatment of osteoarthritis of the hip, and Causes and prevention of congenital malformation of the spine and limbs.

New Hospital in Adrian, Michigan

The new Emma L. Bixby Hospital in Adrian, Michigan, opened its doors Monday, June 24. A mass move of patients, personnel and equipment was made on that day, from the old location to the new six-story structure. The move climaxed an all-out community-wide effort to achieve completely ade-

-Continued on page 158a

MEDICAL TIMES



New! Theradan

with Sarthionate

Clears up the severest dandruff with just 3 applications



RELIEF LASTS FOR MONTHS

Twenty months of clinical investigation on dandruff demonstrate complete clearing of scaling in all cases, usually with just three applications of easy-to-use Theradan. Dandruff cases resistant to resorcin, sulfur and selenium preparations clear promptly and safely with new Theradan.

Relief of scaling is long-lasting-scalp stays clear for 1 to 4 months.

HOW THERADAN ACTS

THERADAN is a therapeutic formula not a shampoo or tonic. THERADAN contains Sarthionate, our trademark for a distinctive new combination of a special form of sulfur and a wetting agent.

This unique solution not only clears loose dandruff, but also removes dead tissue by penetrating the outermost layers of the scalp. In mild or moderate cases of seborrhea, THERADAN is left on the scalp for ½ to 1 hour before shampooing. In severe cases, THERADAN is left on up to eight hours or over night.

Theradan

active ingredients

Sarthiesale

bis (baryttrinethylomosowa) polythosate (by weight 18% tatradecylomioe a laereyl sarcesine (by weight) 6.5% othyl alcohol (by visione) 68.86%

For more information about the clinical background of THERADAN, write to Medical Director, Dept. M.77



Bristol-Myers Co. + 19 W. 50 St. + New York 20, N. Y.



IN



ANY KIND



MOTION (S) SICKNESS

... for trips without trouble

etc... efficacy of treatment is raised from an average of 62 per cent when symptoms of motion sickness are present to about 90 per cent when Dramamine is taken prophylactically.**

Lederer, L. G., and Kidera, G. J.: Passenger Comfort in Commercial Air Travel with Reference to Motion Sickness, Internat. Rec. Med. 167:661 (Dec.) 1954.

for dramatic results Dramamine

Brand of Dimenhydrinate

SEARLE

NEWS AND NOTES

-Continued from page 156s

quate hospital facilities for Adrian and the surrounding area.

A three day open house led up to the moving day. There was a special preview for health and medical officials and state, county, and local officials joined the many contributors and the general public in inspecting the complete facilities of this modern hospital.

The new hospital has been cited as an example of thorough planning and efficient teamwork on the part of architect, administration and hospital staff. Close contact between everyone involved permitted architect Louis J. Sarvis to design a structure that not only meets the needs of every operation of the hospital, but coordinates these operations to increase efficiency and reduce operating costs.

Administrator Douglas McNabb stressed the fact that, while the new hospital provides more than fifty additional beds, and a number of new facilities not now available, there would be no increase in charges to the patient for room, food and nursing. He also revealed that the new Bixby Hospital had been constructed at a cost-per-bed well under the average for the entire country, without sacrificing one thing essential to a comprehensive hospital by today's modern standards.

The new hospital includes provision for use of radio-active isotopes, as well as additional x-ray facilities. It also contains a post-operative recovery room, a feature that has already attracted nation-wide attention.

-Continued on page 160s

MEDICAL TIMES

Serpasil is one of the safest, least toxic and most effective agents in general practice. Side effects, usually mild, are characteristic of all rauwolfia preparations.

They may, however, be less troublesome than those caused by the whole rauwolfia root, which contains unevaluated constituents as well as reserpine. Complete information furnished on request.

NEWS AND NOTES

-Continued from page 158s

Psychopharmacology Service Center

Psychopharmacology Service Center has been established within the Research Grants and Fellowships Branch of the National Institute of Mental Health, Bethesda, Maryland. The purpose of the Center is to implement a broad program of basic and clinical research aimed at increasing understanding of the mechanisms of action. efficacy, and limitations of the tranquilizing and other centrally active drugs. The program of the Center includes the stimulation and support of work on the basic pharmacologic and psychologic mechanisms of drug action. experimental and clinical studies of drug effectiveness, and research aimed at the development of improved and new methods for predicting and evaluating the efficacy and toxicity of these compounds. The Center will perform informational research advisory and co-ordinating functions, including consulting services, surveys, publication of a news letter, summaries and reviews of research.

Effects of the Cigarette Habit

The University of Wisconsin Medical School has released a statement on the effects of smoking. A group of scientists from all parts of the nation, headed by Professor Frank M. Strong of Wisconsin's Department of Biochemistry, have examined all written reports on the subject, and have contacted scientists having specialized in this field of research. Their conclusion is: "The sum total of scientific evidence establishes be-

two reasons for the growing use of **Serpasil*** in everyday practice

Serpasil can always be considered first in hypertension



Alone, reduces blood pressure, slowly and safely, in about 70 per cent of mild to moderate cases. As a "primer," Serpasil can advantageously be used to begin therapy, however severe the case, to adjust the patient to the physiologic setting of lower pressure. As a "background" agent throughout other therapy, Serpasil permits lower dosage of more potent agents, thus minimizing side effects. Average Dose: two 0.25-mg. tablets daily for one week, then maintenance on 0.25 mg. or less daily.

 Coan, J. P., McAlpine, J. C., and Boone, J. A.: J. South Carolins M. A. 51:417 (Dec.) 1959.

yond reasonable doubt that cigarette smoking is a causative factor in the rapidly increasing incidence of human epidermoid carcinoma of the lung." The report points out that at least 16 independent studies carried on in five countries during the past 18 years have shown that there is a statistical association between smoking and the occurrence of lung cancer. Lung cancer occurs much more frequently among cigarette smokers than among non-smokers. and there is a direct relationship between the incidence of lung cancer and the amount smoked. It is estimated that one out of ten of the two-packs-a-day smokers will succumb to pulmonary cancer. The opinion of the Study Group is that the smoking of tobacco, particularly in the form of cigarettes, is a health hazard that suggests the need of initiating public health measures to

combat the situation. At the same time, it is recognized that cigarette smoking is not responsible for all cases of epidermoid cancer of the lung. Various factors, among them atmospheric pollutants, are not without substance as causative factors.

Evidence points to an association between smoking and a number of other disease entities. There is a clinical impression held by a number of physicians that smoking would seem to be detrimental to previously damaged coronary arteries, but there is no convincing biological or clinical proof at present that smoking per se has a causative role in cardiovascular disease. Other conditions which could be affected are carcinoma of the larynx, oral cavity, esophagus, bladder and stomach; peptic ulcer; bronchitis, and tuberculosis. In

-Continued on page 164s

Serpasil provides

true emotional control

Recommended for the many patients who are too nervous or agitated to be adequately calmed by sedatives or weaker tranquilizers. Serpasil actually sets up a "stress barrier" against anxiety and tension these patients would otherwise find intolerable. Average Dose: 0.1 mg. to 0.5 mg. (two 0.25-mg. tablets) daily.

Although it is a first choice in hypertension, Serpasil does not significantly lower blood pressure in normotensive patients.

SUPPLIED:
TABLETS, 0.1 mg., 0.25 mg., 1 mg., 2 mg., and 4 mg.
ELIXIES, 0.2 mg. and 1 mg. per 4-ml. teaspoon.
PARENTERAL Socurion: Ampuls, 2 ml., 2.5 mg. Serpasil per ml.
Multiple-dose Vials, 10 ml., 2.5 mg. Serpasil per ml.





SELECTION OF SUITABLE SULFONAMIDE IS OF PRIME IMPORTANCE IN LONG-TERM THERAPY OF URINARY TRACT INFECTIONS

Drug Must Meet High Standards of Efficacy and Safety

In recent years sulfonamide therapy for urinary tract infections has gained new popularity because the original drugs have been replaced by more soluble, less toxic and more effective sulfas. Gram for gram, a single sulfonamide featuring high solubility and low acetylation is unsurpassed for efficacy and safety—especially in prolonged therapy.

An editorial in the Journal of the American Medical Association states that sulfonamides are successful in 90 per cent of urinary tract infections, and "...should be tried first." There are many properties a sulfonamide should possess before it can be claimed to be efficacious and safe. "Thiosulfil," brand of sulfamethizole, is considered to be one of the "... most acceptable sulfonamides for treatment of urinary tract infections..."

Broad Bacteriostatic Index

"Thiosulfil" is effective against most gram negative and gram positive organisms commonly found in the urinary channels.

High Plasma - Urine Levels

"Thiosulfil" is rapidly absorbed and excreted, achieving high antibacterial levels in the urine and throughout infected tissue, with negligible penetration into red blood cells.

High Solubility

"Thiosulfil," in both the active and acetylated forms, is highly soluble in urine over a wide pH range, thus permitting effective action with min-

imal side effects. Alkalinization is not required; fluids may be restricted rather than forced.

Low Acetylation

"Thiosulfil" is virtually unacetylated. As much as 90-95 per cent remains in the free therapeutically active form. Virtually all of a given dose is therefore available for antibacterial action.

In a long-term clinical study, patients with incurable chronic urinary infections were kept symptom free as long as five or six years on a maintenance dose of one or two tablets of "Thiosulfil" daily. In another evaluation, 20 patients were given 25-100 grams of "Thiosulfil" over a period of 20-90 days without incidence of side reactions. Goodhope reports that during 30 months of clinical use with "Thiosulfil," no evidence occurred of exanthemata, urticaria, emesis, fever, hematuria and crystalluria.

Recommended Dosages: 0.5 Gm. four times daily. The pediatric dosage is 30 to 45 mg. daily per pound of body weight. If voiding occurs during the night, an extra half-dose should be given. Fluids may be restricted rather than forced.

Availability: Tablets, 0.25 Gm. (bottles of 100 and 1,000). Suspension, 0.25 Gm. per 5 cc. (bottles of 4 and 16 fl. oz.).

Bibliography on request.

AYERST LABORATORIES
New York, N. Y. • Montreal, Canada

Single sulfonamide specifically for urinary tract infections—unexcelled in long-term

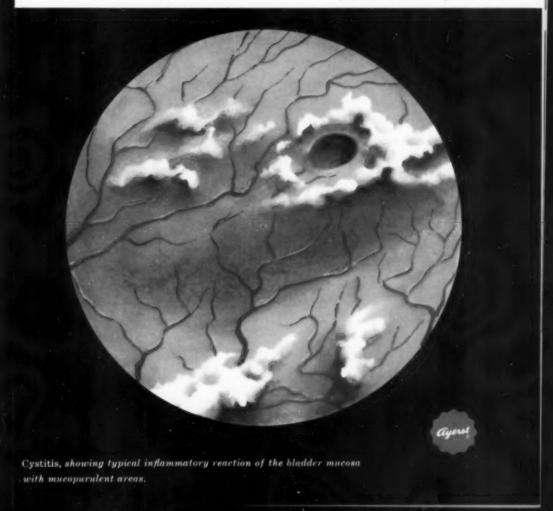
therapy. Gram for gram "Thiosulfil" is unexcelled for effective bacteriostatic action against a broad variety of urinary tract pathogens. High solubility, complete absorption, minimal acetylation, and negligible penetration into red blood cells ensure rapid and effective action with minimal side effects.

Ayerst Laboratories · New York, N.Y. · Montreal, Canada

direct effective

"THIOSULFIL"

(Brand of sulfamethizole)



"MEDIATRIC" helps restore physiologic efficiency when the patient exhibits signs of . . . general debility . . . chronic mental fatigue

In older patients, these symptoms are frequently the first signs of physiologic deterioration. Prompt institution of "Mediatric" therapy may forestall and even reverse premature "damage" and help prolong the active life of the patient.

"Mediatric" — steroid-nutritional compound, available in tablets, capsules and liquid.

Ayerst Laboratories . New York, N. Y. . Montreal, Canada





57

Aging Is Inevitable – Premature "Damage" Is Not

Steroid-Nutritional Therapy Helps Maintain Health and Vigor in the "Second Forty Years"

The patient who complains of "just getting old" need not be abandoned to a nonproductive life of discomfort. Positive therapy may arrest, or even reverse, the premature damage of gonadal decline and nutritional inadequacy in the growing population of older patients.

Complaints of such symptoms as muscular pain, fatigue, irritability, and poor appetite in the patient over 40 may be the first indications of three major stress factors in the aging process: gonadal hormonal imbalance, nutritional inadequacy, and emotional instability. Institution of adequate measures reduces immeasurably the likelihood of premature disability, chronic illness, and uselessness in later years.¹

"Mediatric" is specifically formulated to guard against premature damage and breakdown of body reserves; to re-establish homeostasis in declining cells, thus delaying the degenerative process; and to raise the level of health by restoring physiologic efficiency:

"Mediatric" provides estrogen and androgen in small doses, nutritional supplements, and a mild antidepressant to promote continuing health and vigor. Recommended dosages: Male — 1 tablet or 1 capsule (or 3 teaspoonfuls) daily, or as required. Female — 1 tablet or 1 capsule (or 3 teaspoonfuls) daily, or as required, taken in 21 day courses with a rest period of one week between courses.

Bibliography on request.

"MEDIATRIC" Tablets and Capsules

Folic acid U.S.P. 0.33 mg.
Ferrous sulfate exsic. 60.0 mg.
Brewers' yeast

"MEDIATRIC" Liquid

Each 15 cc. (3 teaspoonfuls) contains:

Conjugated estrogens equine	
("Premarin"®)	0.25 mg.
Methyltestosterone	2.5 mg.
Thiamine HCI (B ₁)	5.0 mg.
Vitamin B ₁₂	1.5 mcg.
Folic acid U.S.P	0.33 mg.
d-Desoxyephedrine HC1	1.0 mg.

contains 15% alcohol No. 910-bottles of 16 fluidounces and 1 gallon.

AYERST LABORATORIES
New York, N. Y. • Montreal, Canada &

-Continued from page I&la

thromboangiitis obliterans, cessation of smoking results in material lessening of symptoms.

The organizations which sponsored the study are the American Cancer Society, the American Heart Association, the National Cancer Institute, and the National Heart Institutes.

The Wartime Incidence of Certain Diseases

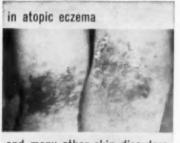
Dr. Herwig Hamperl, Director of the Institute of Pathology at the University of Bonn, Germany, first became interested in the changes in the incidence of disease during wartime when he visited Russia in 1929, and studied health records there. Later, perusal of Paris health records disclosed certain changes during the siege of that city in 1870-71. During World War II, he saw confirmation in Germany of his previous observations.

In a speech at the University of Wisconsin Medical School, the Doctor said that nervous strain and shortages of proper foods were undoubtedly responsible for the types of disease most prevalent among the population; conversely, he believes that some food shortages were advantageous. With the greatly diminished quantities of sugar available. diabetes showed a definite decline. The lowered percentage of cardiovascular especially arteriosclerosis, diseases, probably stemmed from the lowered fat content of the diets. On the other hand, under the emotional and physical stress peptic ulcer jumped 1,000 per cent in Germany and Austria. Eclampsia of pregnancy increased 200 to 300 per cent. In these instances, protein insufficiency was an undoubted factor. In the neutral countries, the incidence of tuberculosis continued on its steady gradual decline, while cases in the warring nations were increased to a striking degree. Psychiatrists, the doctor added. seemed to believe that war had no decided effect on the incidence of mental illness.

International Conference on Cancer Drugs and Treatment

What was designated as "one of the most significant developments in the history of the chemotherapy of cancer," was the International Conference on Cancer Drugs and Treatment held in New York recently under the auspices of the New York Academy of Sciences





use new Vioform®
Hydrocortisone
Cnoam antibacterial

Cream

antibacterial antifungal anti-inflammatory antipruritic

Tubes of S and 20 Gm. VIOFORM* (lodochlorhydraeyguin CIBA)

C I B A SUMMIT, N. J.

See page following 146a for actual clinical demonstration

sick of eating



...sick after eating

"Mealtime doldrums" (nausea, lack of appetite, gastrointestinal distress, dyspepsia, weakness and fatigue) are symptomatically consistent with biliary stasis. More than replacement therapy (bile salts) is needed. A copious flow of highly fluid bile—hydrocholeresis—promptly drains the biliary tree and clears away sluggish bilious matter, relieves irritation, and prevents infection of the bile ducts. Hydrocholeresis restores the physiologic supply of natural bile from within and achieves laxation without catharsis. Dehydrocholic acid is the most potent hydrocholeretic and the least toxic of the bile derivatives.

Spasmolysis is rapidly and effectively achieved by homatropine methylbromide which has been proved notably safe in the new, higher dosage of five milligrams.

Cholan V, a combination of dehydrocholic acid and homatropine methylbromide, affords prompt relief from symptoms of hepato-biliary insufficiency and spasm, and helps maintain adequate bile fluidity—especially indicated in dyspepsia, obesity, pregnancy, and alcoholism.

new Cholan ▼

Each tablet contains 250 mg. Cholan DH® (dehydrocholic acid Maltbie) and 5 mg. homatropine methylbromide. One or two tablets t.i.d., after meals. Bottles of 100, 500, and 1,000.

Hydrocholeresis is contraindicated in jaundice and in complete bile duct obstruction.

Also available:

Cholan DH® (250 mg. dehydrocholic acid);

Cholan HMB (250 mg. dehydrocholic acid, 2.5 mg. homatropine methylbromide, ½ gr. phenobarbital).

Write for free sample supply to Professional Service Department.
MALTBIE LABORATORIES DIVISION

WALLACE & TIERNAN, INC.



Belleville 9, New Jersey

Diagnosis, Please

ANSWER

(from page 27a)

Scirrhous Carcinoma of the Stomach (Leather-bottle)

Note persistent narrowing with rigidity and absence of peristalsis of most of the stomach.

in seborrheic dermatitis



and many other skin disorders

Hydrocortisone

Cream

antibacterial antifungal anti-inflammatory antipruritic

Tubes of 5 and 20 Gm.
VIOFORM® (redochlorhydroxyquin CIBA)

CIBA SUMMIT, N.J.

See page following 146a for actual clinical demonstration

NEWS AND NOTES

-Continued from page 164a

and the Cancer Chemotherapy National Service of Bethesda, Maryland. Scientists from England, Canada, Japan, Germany, and Hungary were present. In discussing the various drugs which have been used for cancer patients, it was clearly specified that these drugs neither cure cancer nor stop malignant growths. They act to decrease the rapid proliferation of neoplastic tissue.

News From the Medical Schools

From the various medical schools we have clipped the following items of interest:

CORNELL

The Cornell Board of Trustees recently named John E. Deitrick, M.D., dean of the Cornell Med-cal College in New York City.

Dr. Deitrick, a specialist in cardiovascular disease and mineral metabolism, has been Magee Professor of Medicine at Jefferson Medical College since 1952. He succeeds Dr. E. H. Luckey, who will be head of the college's department of medicine.

From 1948-52, Dr. Deitrick directed the Survey of Medical Education sponsored by the American Medical Association and the Association of American Medical Colleges. He was co-author with Dr. Robert C. Berson of the survey's report, "Medical Schools of the United States at the Mid-Century."

Dr. Deitrick was on the faculty of the New York Hospital-Cornell Medical College from 1936-52, and from 1946-49 was also visiting physician and director

-Continued on page 168s

MEDICAL TIMES

IPRONIAZID

the psychic energizer is available only as

MARSILID 'ROCHE'

For information concerning new uses for this remarkable therapeutic agent see pages 72a, 73a

Marsilid® Phosphate — brand of ipromiazid phosphate

HOFFMANN-LA ROCHE INC NUTLEY 10 · NEW JERSEY

NEWS AND NOTES

-Continued from page 166s

of the Second Cornell Medical Division of Bellevue Hospital. He is a native of Watsontown, Pa., and a graduate of Princeton and Johns Hopkins Medical School.

DUKE UNIVERSITY

Dr. A. W. Naylor, Associate Professor of Botany at Duke University, has received a grant of \$36,300 from the Herman Frasch Foundation. The research project, expected to extend for five years, will cover the biochemistry of naturally produced growth inhibitors and growth promoting substances in plants. Under the sponsorship of the American Cancer Society, Dr. Naylor was instrumental in the development of maleic

hydrazide, a substance which inhibits plant growth without injury. There is a possibility that this agent may be applied successfully to the growth of cancer cells.

STATE UNIVERSITY OF IOWA

An award amounting to \$1,250 has been received by Dr. L. E. January, State University of Iowa College of Medicine as a continuation of the grant from the American Heart Association for support of the Cardiac-in-Agriculture Demonstration Project being carried out in Washington County, Iowa.

UNIVERSITY OF TENNESSEE

Dr. D. B. Zilversmit, Professor of Physiology at the University of Tennessee College of Medicine, has been selected second award winner in the 1956

-Continued on page 170a

For NERYOUS indigestion ... and G-I SPASM

Convertin-H fortifies the important gastric and pancreatic enzymes for efficient digestion of proteins, fats, and carbohydrates.

Convertin-H tablets

Fortified digestive enzymes

WITH ANTISPASMODIC

DOSE: One or two tablets with or just after meals.
SUPPLIED: In bottles of 84 and 500 tablets.

Sond for Samples . F. ASCHER & COMPANY, INC. Ethical Medicinals . Kansas City, Mo.



in urinary infection:

new Mandelamine®

Suspension

appealing to children

Mandelamine Suspension is the new, highly palatable liquid dosage form especially adapted to the needs of infants and children.

SUPPLIED: 250 mg. per 5 cc. teaspoonful. Bottles of 4 and 16 fl. oz.

PER DAY

ADULTS				
CHILDREN OVER 18 MONTHS (1 teaspoonful)	•	•	•	•
CHILDREN UNDER 18 MONTHS (% teaspoonful)	•	•	•	•

in urinary infection:

Mandelamine

Hafgrams® O.S Gm. (7% gr.)

convenient for adults

The complete therapeutic benefits of Mandelamine can be attained with fewer tablets when Mandelamine Hafgrams are prescribed.

Mandelamine is an efficient urinary antiseptic of extremely low toxicity and broad therapeutic activity.

Mandelamine is practical therapy, for even on prolonged use, it does not cause hypersensitization, toxic reactions or resistance.

SUPPLIED: 0.5 Gm. (7½ gr.) each, entericcoated tablets. Bottles of 100, 500, and 1000.



NEPERA LABORATORIES DIV., Yonkers, N. Y.

NEWS AND NOTES

-Continued from page 168a

Glycerine Research Contest sponsored by the Glycerine Producers Association. An honor certificate and \$300 was presented to the Doctor for the development of commercially stable high-caloric fat emulsions which can be used for intravenous feeding.

UNIVERSITY OF TORONTO

A grant of \$14,600 from the National Foundation for Infantile Paralysis has been made to the Connaught Medical Research Laboratories of the University of Toronto. The award is to be used for experimental attempts to isolate strains of monkey kidney cells that will grow and multiply indefinitely in the

laboratory and that will retain their susceptibility to polio virus and may be harvested repeatedly.

UNIVERSITY OF WISCONSIN

 Prof. Charles Heidelberger, a University of Wisconsin scientist reported recently that another chemical, 5-fluorouracil, has been added to the list of those which may be useful against cancer.

It has been shown that 5-fluorouracil has significant activity against several types of cancer in rats and mice. Its biological action may be related to that of 6-mercaptopurine and 8-azaguanine, which also have an inhibitory influence

-Continued on page 172a

WHAT'S YOUR VERDICT

-Concluded from page 37a

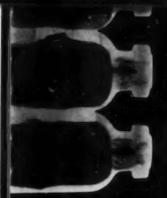
The Court granted the order: The provision of the City Charter that members of the medical staff may accept fees from patients who recover damages in tort actions is merely permissive in nature. It does not give the Department of Hospitals the authority to compel an assignment in behalf of such physicians, nor does it create any lien in their behalf. It follows, therefore, that the refusal of the department of hospitals to furnish the information requested in the absence of the execution by the petitioner herein of an assignment to the physicians is unreasonable, unwarranted and arbitrary, and constitutes an improper abuse of discretion by this department.

> Based on decision of the Special Term, Supreme Court of New York.

> > MEDICAL TIMES



for actual clinical demonstration













to try it













fastest acting local anesthetic – as safe as it is effective

How safe is Xylocaine? In five years, over 500,000,000 injections of Xylocaine HCl Solution have been given. "The apparent clinical safety of Xylocaine is gratifying, for without this quality, its additional properties would not warrant an enthusiastic report.... The truth of the matter is, however, that Xylocaine approaches the ideal drug more closely than any other local anesthetic agent we have today."*

How effective is Xylocoine? It produces more rapid, complete, and deeper anesthesia than other local anesthetics used in equivalent doses. It gives a wide area of analgesia. Its long duration of action reduces the need for additional injections.

....is to use

XYLOCAINE

How does Xylocuine fit into my practice? For local infiltration anesthesia, it is used routinely in minor surgical procedures such as closure of lacerations, removal of cysts, moles, warts; treatment of abscesses; and in the reduction of fractures.

For therapeutic interruption of nerve function by temporary nerve blocks, it is used in herpes zoster, subdeltoid bursitis, fibrositis, myalgia of shoulder muscles, and periarthritis due to trauma. The relief of pain in these conditions at times appears to be the most important part of treatment.

The topical anesthetic properties further enhance its usefulness. Topical anesthesia can be obtained by spraying, by applying packs, by swabbing, or by instilling the solution into a cavity or on a surface.

Available in 2 cc. ampuls, 20 cc. and 50 cc. vials, in strengths of 0.5%, 1% and 2%, with or without epinephrine.

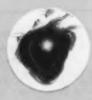
Bibliography of approximately 300 references upon request.

Southworth, J. L., and Dabbs, C. H.: Xylocaine: a superior agent for conduction anesthesia, Anesth. & Anaig. 32:159 (May-June) 1953.

Astra Pharmaceutical Products, Inc., Worcester 6, Mass.



Subacute Bacterial Endocarditis: Advance in Treatment



"... DEFINITELY SUPERIOR" SERUM LEVELS'

Studies^{1,2} of Pen·Vee·Oral in selected cases of subscute bacterial endocarditis suggest significant concepts: (1) the feasibility of oral therapy, and hence (2) an important advance in treatment. Reporting on the distinctive properties of Pen·Vee·Oral, Quinn et al. observe that massive doses produced average serum levels "definitely superior to those obtained after a comparable oral dose of penicillin G.... When 2,000,000 units [1200 mg.] of penicillin V [Pen·Vee·Oral] was administered orally every 4 hours, there was a significant degree of penicillinemia throughout the 24-hour period." The high-dosage regimen, prolonged for 6 weeks, "did not result in toxic gastrointestinal manifestations." In these groundwork studies, 10 out of 11 patients with bacterial endocarditis have been successfully treated with Pen·Vee·Oral alone or in combination with streptomycin and probenecid.

- 1. Quinn, E.L., et al.: J.A.M.A. 160:931 (March 17) 1956.
- Cox, F., Jr., et al.: Fourth Annual Symposium on Antibiotics, Washington, D.C., October 17, 1956.

PEN · VEE · Oral



Penicillin V, Crystalline (Phenoxymethyl Penicillin), Tablets Oral Penicillin with Injection Performance



-- Continued from page 170a

on some types of cancers. Whether the new substance will be more useful than these—which have serious side-effects is not yet known for certain. It is undergoing preliminary clinical trial.

· R. K. Boutwell, another U. W. cancer researcher has found that some of the common so-called surface active agents applied in very high concentrations and over very long periods of time-so long and so high that even workers in detergent factories would not be similarly exposed -- will cause skin cancer in mice.

The chemicals which were found carcinogenic in the study were sodium lauryl sulfate, polyoxyethylene sorbitan monostearate, and triethenolamine lauryl sulfate.

To produce the cancer, however, it was necessary to apply the chemicals in concentrated form continuously to the mouse's skin for 10 to 40 weeks. This is about half an average mouse lifetime. Boutwell said a comparable period of time - half a lifetime - would probably be necessary for concentrated detergents to cause skin cancer in humans. This could conceivably occur only under industrial conditions, and even then it is unlikely.

 Major changes in the goals and operations of the University of Wisconsin Medical Center that would cost \$7,-534,740 in buildings, and additional millions in operating costs during the four or five years of the changeover were recommended in a survey report submitted to the University regents recently.

"At present, the University of Wis-

-Continued on page 176s

ideal... ్ద్రాహ్హ్ when dermatoses are in bloom

NEO-MAGNACO

topical ointment

NEOMYCIN + the first water-soluble dermatologic corticoid

outstanding availability, penetration, therapeutic concentrations and potency - without systemic involvement; In 1/2-oz, and 1/6-oz, tubes, 0.5% neomycin sulfate and 0.5% ethamicort (MAGNACORT).

for inflammation without infection MAGNACORT topical ointment

In 1/2-os, and 1/6-os, tubes, 0.5% ethamicort (hydrocortisone ethamate hydrochloride).



PFIZER LABORATORIES (Pfizer) Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York



AGE... In older people, chronic constipation and biliary dyspepsia are often the result of decreased food and water intake, inactivity, intestinal muscle atonicity, increased anorectal disorders, biliary stasis.

for biliary dyspepsia and constipation

OCCUPATION . . . Among the sedentary workers, chronic constipation and impaired digestion are often the result of lack of exercise which retards normal peristaltic action in the gastrointestinal tract.



Tablets of Caroid and Bile Salts with Phenolphthalein are specifically formulated to provide a 3-way, comprehensive approach to the problem of impaired digestion and elimination.

- 1. CHOLERETIC
- 2. DIGESTANT
- 3. LAXATIVE

Bile salts stimulate biliary flow for improved fat emulsification while Caroid steps up protein digestion up to 15%. Gentle stimulant laxatives induce formed, easily passed stools.

For patients who cannot or will not be managed by diet and exercise, Caroid and Bile Salts helps establish normal physiological patterns.

samples available on request

AMERICAN FERMENT COMPANY, INC., 1450 BROADWAY, NEW YORK 18, N. Y.

CAROID AND BILE SALTS Tablets

A "SENSE OF WELL-BEING" IS A WOMAN'S PRIVILEGE



Every woman who suffers in the menopause deserves "Premarin."

Relief from distressing symptoms is promptly obtained and a "sense of well-being" is an extra benefit of therapy.

"Premarin" presents the complete equine estrogen-complex. Has no odor, imparts no odor. Available as tablets or liquid.



in the menopause and the pre- and postmenopausal syndrome





Parkinson's disease

PANPARNIT

hydrochloride

helps patients to help themselves

Most distressing of all to the parkinsonian patient is his muscular rigidity...a pathologically imposed strait jacket that forces him to depend on others for many of his needs.

> PANPARNIT..."the drug of choice" in 62 per cent* of cases...generally affords substantial relief of spasm, restoring the patient's ability to care for himself and boosting his morale. In many instances PANPARNIT also produces gratifying relief of tremor.

A gradually increasing schedule of dosage is recommended for optimal results.

> Schwab, R. S., and Leigh, D., J.A.M.A. 139:629, 1949.

PANPARNIT® hydrochloride (caramiphen hydrochloride GEIGY). Sugar-coated tablets of 12.5 mg. and 50 mg.

GEIGY

Ardsley, New York



NEWS AND NOTES

-Continued from page 172a

consin has a fine Medical School and hospital," the report says, and then goes on to pinpoint weaknesses and recommend changes that would adjust it "to the rapidly changing scene in medical care, medical education, and health resources of the state."

It recommends expansion of the Medical School to raise class limits from the present 80 to 100 students each year, and expansion of obstetrics, pediatrics, emergency service and out-patient service, to give students more opportunities for training. It asks more space and funds for basic and clinical research.

 Recently dedication exercises were held at the University of Wisconsin Medical School for the Bardeen Medical Laboratories, named for Dr. Charles Bardeen, first Dean of the Medical School.

The unit will provide space for the Departments of Anatomy and Psysiological Chemistry.

Radiologic Physics Course at Columbia

The College of Physicians and Surgeons of Columbia University announces a course in radiologic physics, leading to the degree of Master of Science, to be given during the academic year 1957-58. This is a fulltime, integrated course including lectures, seminars, conferences, and laboratory work which will be stressed, a number of experiments having been planned to cover all aspects of the course.

West Virginia University Increases Facilities

The new Basic Science Building of the West Virginia University Medical Center is nearing completion, and the School of Medicine expects to occupy the building soon. This is the first step in the expansion of the School of Medicine from a two-year to a fouryear status. The Basic Sciences Building will house all preclinical departments as well as facilities for the Schools of Dentistry, Nursing and Pharmacy, and training in allied specialties.

In Tension, Anxiety, FEAR, Compulsion and Depression



SUAVITIL

(BENACTYZINE HYDROCHLORIDE)

Often effective where other psychotropic agents often fail.

Suavitil reduces the psychosomatic interplay implicated in many functional and organic disorders. Helps restore proper emotional perspective.

Grant to University of Michigan

A grant of \$250,000 has been made by the Russell Sage Foundation to support a program of doctoral training and research in social work and social science at the University of Michigan.

Courses Offered by New York University Post-Graduate Medical School

The New York University Post-Graduate Medical School is offering courses in ophthalmology for specialists. Histopathology will be the subject from September 16-20, 1957; Surgery of the Eye, October 28-November 1; Ophthalmoscopy, November 4-8, and Surgery of the Cornea, December 2-6.

For the physician interested in medicine in industry, an eight-week course in Occupational Medicine will begin on September 16, 1957.

A Grant for Alcohol Studies At Yale

The Center of Alcohol Studies at Yale University has received an award for a new research program aimed at devis-

ing a yardstick for measuring the results of treatment of alcoholic cases in outpatient clinics. The \$80,291 grant. covering the initial two years of the project, has been awarded by the National Institute of Mental Health of the US Public Health Service. The ultimate purpose of the project is to determine the effectiveness of the treatment of alcoholics afforded in the various states which spend an estimated four million dollars annually on these clinics. The Center of Alcohol Studies will be in charge of the research program, expected to extend over a period of five Three members of the New York University faculty will collaborate in the research work.

New Rehabilitation Institute at Washington University

Plans are under way for the erection of a rehabilitation institute to join other units of the Washington University Medical Center at St. Louis. Construction of the air-conditioned building is expected to begin this month. The estimated cost of \$675,000 has been

In Tension, Anxiety, Fear, COMPULSION and Depression

SUAVITIL.

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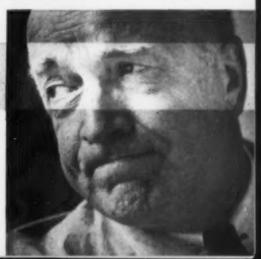
Suavitil is also an antiphobic, antiruminant and differs fundamentally from any of the other agents in this field.

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DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.



made available by funds contributed by the late Mrs. Irene Johnson, for whom the unit will be named, by a Federal grant of \$114,000 under the Hill-Burton Act, and by contributions from the National Foundation for Infantile Paralysis.

In addition to the treatment of patients afflicted with hemiplegia, paraplegia, amputations, cardiac disabilities, muscular dystrophy, cerebral palsy, alcoholism, and speech and hearing defects, the institute will train personnel in rehabilitation procedures, seek to develop new methods of treatment, and carry out active research relating to chronic disabilities.

Hartford Grant to University of Pennsylvania

Three research projects will be undertaken by faculty members of the University of Pennsylvania School of Medicine following the receipt of an award from the John A. Hartford Foundation, Inc., by the University's Hospital in the amount of \$343,800. The projects are: (1) Objective meas-

urements for the appraisal of patients' condition under anesthesia, (2) Diagnosis of cardiac lesions and the care of patients subject to heart surgery, and (3) Lesions of the blood vessels and their alleviation.

Stanford Plans Medical Center

Former Dean Cutting of Stanford University has been a key figure in planning the \$22,000,000 Stanford Medical Center to be erected on the Palo Alto campus. This consolidation of units will permit the teaching of medicine at a single location.

New Children's Hospital at University of Michigan Medical Center

Very elaborate plans for a Children's Hospital to cost approximately \$6,700,000 are nearing completion at the University of Michigan Medical Center. The 200-bed hospital will have the most modern and up-to-date facilities available, including glass partitions to enhance nursing supervision, playrooms on each floor, and living-in quarters for parents to give the child home-like care. A

In TENSION, Anxiety, Fear, Compulsion and Depression



SUAVITIL

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Often effective where other psychotropic agents often fail.

Suavitil reduces the psychosomatic interplay implicated in many functional and organic disorders. Helps restore proper emotional perspective. unique feature of the new building will be its self-sufficiency within the medical center: it will have its own business office, accounting department, pharmacy, kitchen, and other services thus reducing traffic between it and the main hospital.

Award for Research on Muscles

The State University of New York Upstate Medical Center, Syracuse, announces an award of \$9,000 from the Muscular Dystrophy Association of America.

Expanded Facilities Planned for Creighton University

A total of \$2,285,000 has been pledged to the Greater Creighton Development Fund whose members are looking ahead to a \$14,000,000 building program.

USC Receives Research Awards

Faculty members in the various departments at the University of Southern California are the recipients of a number of research awards.

The Department of Anatomy has received \$8,290 from the United States Public Health Service.

The Department of Biochemistry and Nutrition has been granted several awards totaling \$129,178 from the USPHS; \$39,422 from the Atomic Energy Commission; \$56,495 from other agencies.

The Department of Physiology has been granted \$17,773 from the U.S. Public Health Service, and \$22,700 from other agencies.

The Department of Medical Microbiology has been granted \$3,162.

The Department of Pathology has been granted \$36,376 from the USPHS, and \$54,034 from other agencies.

The Department of Pharmacology and Toxicology has been granted \$17,940 from the USPHS, and \$20,730 from other agencies.

The Department of Medicine has been granted \$137,705 by the USPHS, and \$91,916 by other agencies.

The Department of Pediatrics has been granted \$18,361.

In Tension, ANXIETY, Fear, Compulsion and Depression

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Often effective where other psychotropic agents often fail.

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University of Illinois Awards

At the University of Illinois College of Medicine, gifts and grants of \$591,-353 in 1955 and \$983,813.63 in 1956 have been augmented in 1957 by a grant of \$38,151 from the Public Health Service.

Cancer-cell Research at Creighton University

A \$3,000 grant from the Walter Winchell Foundation has been presented to Creighton University for cancer research. This sum will be used for a research project on cancer cells to be conducted by W. L. Ryan, Ph.D., Assistant Professor of Biological Chemistry at the Creighton School of Medicine. By growing cancer cells in conjunction with molds or bacteria, Dr. Ryan stated, he hopes to produce an antibiotic capable of killing the cancer cells.

Research Awards to Medical College of Georgia

Members of the Faculty of the Medical College of Georgia have recently been granted several research awards. Dr. Walter G. Rice, Associate Professor of Pathology has been awarded \$6,238 by the National Cancer Institute for his cancer research program.

Dr. William D. Boring (Phd), Assistant Professor of Medical Microbiology and Public Health, has received \$12,736 for 1957 which will be renewed for two additional years at \$10,350 per year. This grant from the National Institute of Allergy and Infectious Diseases will support research on the factors influencing host-virus interactions.

Dr. Harry B. O'Rear, Dean of Faculty and Professor of Pediatrics and W. Knowlton Hall, PhD, Professor and Chairman of the Department of Biochemistry are the recipients of a grant of \$7,590 renewable for two additional years from the National Institute of Arthritis and Metabolic Diseases. Their project concerns oxalate metabolism.

Bellevue To Study Causes of Deafness

The Alfred P. Sloan Foundation has granted \$82,000 to New York-Bellevue Medical Center to support research on

In Tension, Anxiety, Fear, Compulsion and DEPRESSION



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the causes of deafness. The project will be under the direction of Dr. R. J. E. Hawkins, Jr. who has done extensive research on the effects of antibiotics on the inner ear.

Dr. Bernard Levinson

Dr. Bernard Levinson has been named Director of Medical Education and Instructor in Medicine at the State University of New York, Up-state Medical Center, Syracuse.

The Effects of Atomic Radiation

The Scientific Committee on the Effects of Atomic Radiation established by the United Nations General Assembly accepts the view that the irradiation of human beings, and especially of their germinal tissue, has certain undesirable effects.

Information received so far indicates that, in certain countries - Sweden, United Kingdom and the United States -by far the most important artificial source of such irradiation is the use of radiological methods of diagnosis and that this may be equal in importance to

radiation from all natural sources. It is possible that such radiation may be having a significant genetic effect on the population as a whole.

The Committee is fully aware of the importance and value of the medical use of radiations but wishes to draw the attention of the medical profession to these facts and to the need for a more accurate estimate of the amount of exposure from this source. The help of the medical profession would be most valuable to make it possible to obtain fuller information on this subject.

The Committee would be particularly grateful for information through appropriate governmental channels on ways in which the medical irradiation of the population can be reduced without diminishing the true value of radiology in diagnosis and treatment.

National Jewish Hospital **Expands Facilities**

The National Jewish Hospital, Denver, Colorado, a free, non-sectarian institution, is expanding its facilities for

-Continued on page 1845

In Tension, Anxiety, Fear, Compulsion and Depression

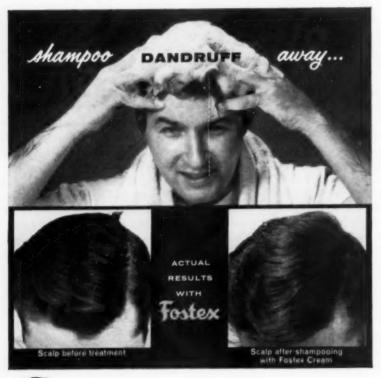
Often effective where other psychotropic agents often fail.

Recommended dose: 1 mg. t.l.d. for two or three days; this may be increased gradually to 3 mg. t.l.d. Supplied: 1.0 mg. scored tablets of benactyzine hydrochloride—bottles of 100. Suavitil is a registered trademark of Merck & Co., Inc.

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Fostex GREAM

new, effective, easy to use treatment for seborrhea capitis

Fostex Cream is a therapeutic shampoo to rid the "itchy" scaly scalp of dandruff... excess oiliness... seborrheic dermatitis. Fostex is effective and well tolerated. It does not contain selenium. And... the Fostex routine is easy... all the patient does is stop using his regular shampoo and start washing his hair and scalp with Fostex Cream. It's a treatment and shampoo all in one.

Festex effectiveness in soborrhea capitis is provided by Sebulytic® (sodium lauryl sulfoacetate, sodium alkyl aryl polyether sulfoanes, sodium dioctyl sulfoauccinate), a new combination of surface active cleansing and wetting agents with remarkable antiseborrheic, keratolytic and antibacterial action, enhanced by sulfur 2%, salicylic acid 2% and hexachlorophene 1%.



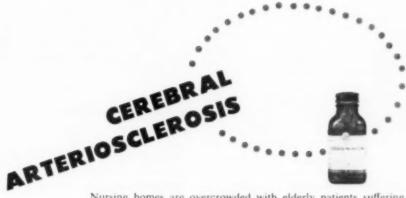
Supplied in 4.5 oz. jars

Write for samples and literature.

Fostex Cream is also used for therapeutic washing of the shin in acne.

Texstarood PHARMACEUTICALS

Division of Foster-Milburn Co., 467 Dewitt St., Buffalo 13, N.Y.



Nursing homes are overcrowded with elderly patients suffering from cerebral arteriosclerosis. In many cases, "strokes" resulting from cerebral hemorrhage or thrombosis are disabling complications.

In this field of neurology and psychiatry, excellent results are obtained with Iodo-Niacin Tablets (potassium iodide 135 mg. and niacinamide hydroiodide 25 mg.). Iodo-Niacin permits long continued use of iodide medication without iodism.

Feinblatt, Feinblatt and Ferguson' treated 59 elderly patients suffering from arteriosclerosis with Iodo-Niacin for over a year. Dizziness was relieved in 71% of cases, vague abdominal distress in 87%, chronic headaches in 61%, and disorientation in 50%. There was not a single case of iodism in this series.



The recommended dosage is 2 tablets three or four times daily, to be continued as long as needed. In urgent cases Iodo-Niacin Ampuls may be used for intramuscular or slow intravenous injections³. Apparently no hazard of iodism.

 Feinblatt, T. M., Feinblatt, H. M. and Ferguson, E. A., Am. J. Digest. Dis. 22:5 1955. 2. Ibid., M. Times 84:741, 1956.

Cole

CHEMICAL COMPANY

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	nen: Please send me professional		and samples o	f IODO-NIACIN.
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NEWS AND NOTES

-Continued from page IRIa

cardiovascular patients with lesions amenable to surgical intervention. Only patients unable to pay for private care are eligible for admission. Since the hospital has a complete cardio-pulmonary physiology laboratory, definite diagnosis by the referring physician is not necessary.

Dr. Hohman Named President of Psychopathological Association

From Duke University comes the announcement that Dr. Leslie B. Hohman, Professor of Psychiatry, was recently installed as President of the American Psychopathological Association. Dr. Hohman is a former president of the National Academy of Cerebral Palsy, and currently heads the North Carolina Society for Crippled Children and Adults.

New Types of Neuromuscular Disease

Speaking at the University of Wisconsin Medical School recently, Dr. Gunnar Wohlfart, Chairman of the Department of Neurology at the University of Lund Medical School, Sweden, stated that Swedish physicians have identified three new hereditary neuromuscular diseases.

Proximal spinal muscular atrophy is believed to be the result of nerve lesions

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helps your peripheral vascular patients

"strong muscle vasodilator activity and an adequate increase in cording output". in intermittent claudication dishatic vascular disease Revend's disease thrombongiltic obliterar

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dose: I tablet Lid or q.i.d. bottles of 50, 100 and 1000 at dimylighm flydros hlorida

that bring about an effect similar to that of muscular dystrophy for which it has undoubtedly been mistaken.

Distal myopathy is understood to cause wasting of the muscles in the hands and lower limbs of persons over 40 years of age.

While decreased amounts of potassium in the blood stream cause the classic form of *familial periodic paralysis*, an excess of potassium is believed responsible for a new form of the disorder.

Dr. C. F. Ryder Assumes New Post

Dr. C. F. Ryder, formerly lecturer on Gerontology at Harvard University School of Public Health, is now a staff member of the US Department of Health, Education, and Welfare. The doctor will co-ordinate and direct training activities in the fields of chronic diseases and the health of the aged; the programs to be conducted in co-operation with state and local health depart-

-Continued on fullowing page

MEDIQUIZ ANSWERS

(from page 61a)

1 (B), 2 (B), 3 (B), 4 (A), 5 (A), 6 (C), 7 (B), 8 (A), 9 (D), 10 (B), 11 (A), 12 (C), 13 (B), 14 (B), 15 (A or C), 16 (C), 17 (D), 18 (D), 19 (B), 20 (A), 21 (B), 22 (D), 23 (C), 24 (C), 25 (C), 26 (C), 27 (C), 28 (D), 29 (D), 30 (A), 31 (C), 32 (D), 33 (A), 34 (C), 35 (B), 36 (D).

vasorelaxation more tissue oxygen improved muscle metabolism pain relief safe • rapid • sustained

walk longer, farther, in more comfort

ARLIDIN diletes peripheral blood vessels in distressed muscles, relexes spesm, increases both cardiac and peripheral blood flow... to send more blood where more blood is needed.

"safe vasodilative agent of minimal toxicity and eptimal taterance"s

¹ Percentage 1 et al. Angulary 1999 1

NEWS AND NOTES

-Continued from preceding page

ments, medical and paramedical schools, and professional societies.

Obesity Can Cause True Cardiac Insufficiency

Extreme obesity can cause true cardiac insufficiency in the absence of intrinsic heart disease, recently reported clinical experience indicates. In four of such cases cited in *Diuretic Review*, significant improvement was found after weight loss. In a fifth case, the onset of cardiac failure was associated with acute respiratory infection. After transient remission the patient went into a type of failure usually seen with cor pulmonale due to emphysema, failed to re-

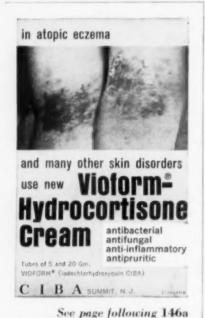
spond to therapy and died. No signs of intrinsic heart disease were found at postmortem. Death was attributed to the "splinting" of the chest associated with obesity, and with respiratory embarrassment.

Move to Hot Climate Can Precipitate Congestive Failure

Removal to an excessively hot and humid area can precipitate congestive failure in a cardiac patient. According to one investigator, writing in Diuretic Review, patients in chronic failure exhibit decreased sweating under any conditions. These and other circulatory. respiratory and neurologic effects may be responsible for the adverse effect of heat and humidity in chronic disorders. Patients with light decompensation may be thrown into acute left ventricular failure by severe atmospheric changes. Due caution is desirable when cardiac patients ask advice about travel or change of abode, the article points out.

A New Method for Coating Pills

Until recently, tablets have been coated in a revolving receptacle some what on the order of the cement mixer. The method assured complete coverage, but the process was lengthy, there was a considerable waste of material, and the presence of the active core in the finished product could not be checked. Hence the interest of Professor Albert Mattocks of the University of Michigan College of Pharmacy in participating in the perfection of a new fool-proof compression tablet-coating machine. With the new procedure, more than one coating may be used on a tablet, and the release of ingredients in a tablet may be spaced. The chief feature, however,



for actual clinical demonstration

-Continued on page 188a



We're troubled with a quandary syndrome

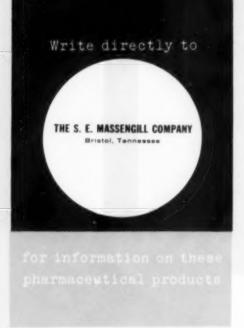
The leading symptom is: Would you prefer to receive only that pharmaceutical product information which you request? Presuming that you might, we're offering a method for you to control your mail.

Currently, we're sending no regular mailings for product promotion. But, of course, the information is available. Simply write on your B blank the names of the Massengill products you're interested in, and mail it to us. Forthright, we'll forward the literature.

Just to remind you, over the page we've listed a number of the leading Massengill pharmaceutical products. Please write to us, if you want more information about any of them. THE S. E. MASSENGILL COMPANY

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Aminodrox® Wider usefulness for aminophylline. Dependable, convenient oral therapy.





The eruptions of psoriasis may disappear in the summer, to reappear in the winter (Madden¹). According to Morris², "the best security against relapse is the completest possible removal of all remnants of the disease."

To avoid recurrence in the fall, psoriasis should be treated intensively with RIASOL all summer. Treatment should be continued until every patch, papule, scale and "bleeding point" has been eradicated.

Permanent results with RIASOL may be secured when it is used conscientiously during the declining phase of psoriasis. Many physicians have reported freedom from relapses lasting years after a course of RIASOL treatment.

RIASOL* contains 0.45% mercury chemically combined with soaps, 0.5% phenol and 0.75% cresol in a washable, non-staining, odorless vehicle.

Apply daily after a mild soap bath and thorough drying. A thin, invisible, economical film suffices. No bandages required. After one week, adjust to patient's progress.

RIASOL is supplied in 4 and 8 fld. oz. bottles at pharmacies or direct.

- 1. Minnesota Med. 22:381, 1939.
- 2. Brit. M. J. 2:1328, 1954.

* T. M. Reg. U. S. Pat. Off.



Before Use of Riasol



After Use of Riasol

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RIASOL FOR PSORIASIS

NEWS AND NOTES

-Continued from page 186s

is the impossibility of a tablet without an ingredient core.

Dr. Landmesser Named to New Post

Dr. Charles M. Landmesser, Associate Professor of Anesthesiology, Albany Medical College of Union University, has been named Chairman of the Department of Anesthesiology at the College and Anesthesiologist-in-Chief to the Albany Hospital.

Congress on Cancer Cytology

From April 25-29, 1957, the First Pan American Cancer Cytology Congress was held at Miami Beach, Florida. The

-Continued on page 190s

in seborrheic dermatitis



and many other skin disorders

Hydrocortisone

cream

antibacterial antifungal anti-inflammatory antipruritic

Tubes of 5 and 20 Gm.
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See page following 146a for actual clinical demonstration



"Please, just one night on the town. Doris just told me they haven't used horse-drawn trolley cars for years".

Antibacterial / Anti-inflammatory

'CORTISPORIN' Otic Drops

- Relieves "incessant itching" and inflammation.
- Eradicates Pseudomonas and other common causes of utilis.
- Helps restore normal acid mantle.
- Rarely sensitives.

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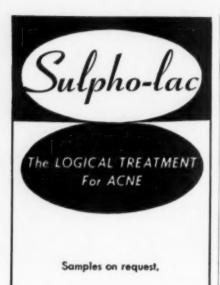
- Counteracts "sogginess" of ear canal.
- Eradicates Pseudomonas and other common causes of otitis.
- · Antifungal for Monilia and Aspergillus.
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Contribute Character of Delicas Programme & Section in Proposition Clymal and 18 Acres, Aust.

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See page following 146a for actual clinical demonstration

NEWS AND NOTES

-Continued from page 188a

Congress was sponsored by the Southern Society of Cancer Cytology, the Cancer Institute at Miami, the University of Miami, and the Cancer Cytology Foundation of America, Inc., New York.

Dr. Kaplan Appointed to International Association of Allerogology

Dr. Morris A. Kaplan has been appointed as the member from the United States to the International Education Committee of the International Association of Allerogology, it has been announced. Each country of the world has one representative on this Committee. Dr. Kaplan is Assistant Professor of Medicine of the Chicago Medical School and Director of the Allergy Research Unit for the School and Research Associate of the Mount Sinai Hospital Medical Research Foundation.

Tranquilizers Differentiate Mental Conditions

The tranquilizing drugs have made possible a more exact understanding of the types of mental disturbance, according to Dr. Frank M. Berger who spoke at the Ninth Annual Scientific Assembly of the American Academy of General Practice at St. Louis recently. There had been a widely-held view that the psychotic patient had regressed from the neurotic stage. With the appearance of the tranquilizing drugs and their administration to mentally disturbed patients, it was immediately apparent that the drug which reacted favorably in one patient prove aggravating to the condition of another-the drug which de-

-Continued on page 192s

In Allergic Rhinitis

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- · ANTIBACTERIAL

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See page following 146a for actual clinical demonstration

NEWS AND NOTES

-Continued from page 190s

pressed psychotic tendencies increased neurotic tendencies. The observations lend strong support to the belief that psychoses and neuroses are entirely unrelated.

AEC Research Grants

The U. S. Atomic Energy Commission has given 92 universities and private institutions life-science research contracts in medicine, biology, biophysics, and radiation instrumentation. Three grants, totaling \$31,826, are new contracts for one year. The field of medicine received two new awards-the University of Florida, \$15,022, and the University of North Dakota, \$6,804. Meharry Medical College of Nashville, Tennessee, received the largest grant (\$40,000) of the 30 medical science contracts that were renewed

Damon Runyon Memorial Fund Renamed

The Damon Runvan Memorial Fund has now become the Walter Winchell Foundation. To date, \$10.646,607 in 723 grants has been allocated as well as 368 fellowships in 224 institutions.

Polio Conference on Closed Circuit TV

The Fourth International Poliomyelitis Conference was scheduled for July 8-12 in Geneva, Switzerland.

Pitman-Moore Co., Indianapolis pharmaceutical and biological firm, and pioneer in closed circuit telecasting of scientific meetings, sponsored a closedcircuit telecast of proceedings at the conference in cooperation with RCA.

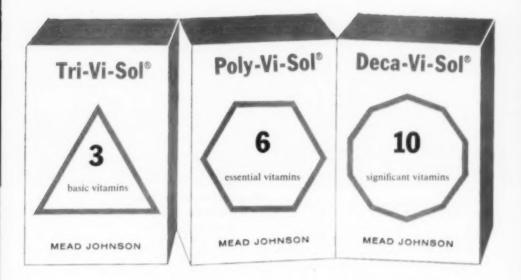
-Concluded on page 194a

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The only topical anesthetic containing 20% dissolved benzocaine. Safe—Effective.

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NEWS AND NOTES

-Concluded from page 192a

Attended by some 2,000 authorities on polio from all over the world, the conference was held in two locations in Geneva.

All sessions were telecast for the convenience of those in attendance since meetings on different subjects were held simultaneously. There were special viewing rooms in each building where televised programs were received in the four official languages of the conference—English, French, German and Spanish. Each address was translated from the original into the other three languages through mechanisms of the type used by the U.N.

While closed-circuit telecasts of professional meetings usually cover only the highlights of the scientific program, this is believed to be the first time that a 5-day medical conference ever has been telecast in its entirety.

Discover New Quinone

A University of Wisconsin scientist recently announced the discovery of a new quinone which acts as a link in the electron transfer chain and said that work with the newly-discovered compound had opened the way to a clearer understanding of the body's basic oxidation chemistry.

The discovery was revealed by Prof. David E. Green of the UW Institute for Enzyme Research in the annual Harvey Lecture, delivered before the Harvey Society of the New York Academy of Medicine.

Green said that the quinone had been isolated in the course of research into the electron transport mechanism, the body's basic oxidative process.



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From the earliest months of pregnancy, through birth and lactation, Calcisalin offers nutritional support so important for both mother and child.

A complete prenatal supplement. Calcisalin is designed for routine use throughout pregnancy and assures important vitamin and mineral benefits. The daily dose provides

- · vitamins and iron
- · calcium in usable form
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Provides usable calcium. Recent evidence indicates that phosphate-containing supplements can actually cause calcium blood levels to fall. 1-8
But Calcisalin supplies calcium in the usable form of the lactate salt. To absorb excess dietary phosphorus, Calcisalin also provides reactive aluminum hydroxide gel. Thus the risk of inadvertently raising the phosphorus level to the point where it interferes with calcium absorption is avoided.

Dosage: Two tablets three times daily after meals. Available: Bottle of 100 tablets and 8-oz. reusable nursing bottles containing 300 tablets.

References: 1. Obst. & Gynec. I:94 (Jan.) 1953. 2. Illinois M. J. 105:305 (June) 1954. 3. Bull. Margaret Hague Maternity Hosp. 6:107 (Dec.) 1953. 4. Missouri Med. 51:727 (Sept.) 1994. 5. J. Michigan M. Soc. 31:862 (Aug.) 1954.

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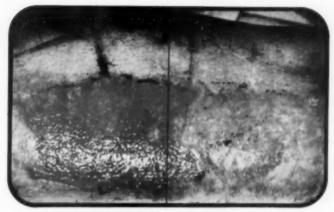
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See page following 146a for actual clinical demonstration



Skin graft donor site after 2 weeks' treatment with ... petrolatum gauze-still FURACIN gauzelargely granulation tissue completely epithelialized

OBJECTIVE EVIDENCE OF SUPERIOR WOUND HEALING

was obtained in a quantitative study of 50 donor sites, each dressed half with FURACIN gauze, half with petrolatum gauze. Use of antibacterial FURACIN Soluble Dressing, with its water-soluble base, resulted in more rapid and complete epithelialization. No tissue maceration occurred in FURACIN-treated areas. There was no sensitization.

Jeffords, J. V., and Hagerty, R. F.: Ann. Surg. 143:169, 1967

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spread FURACIN Soluble Dressing: FURACIN 0.2% in watersoluble ointment-like base of polyethylene glycols.

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CIBA SUMMIT, N. J. 252

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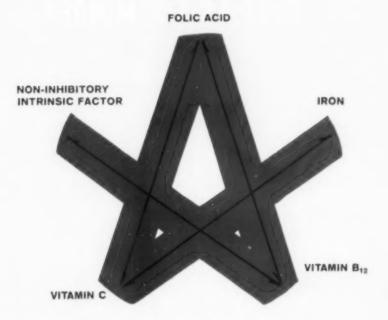
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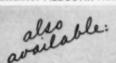
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